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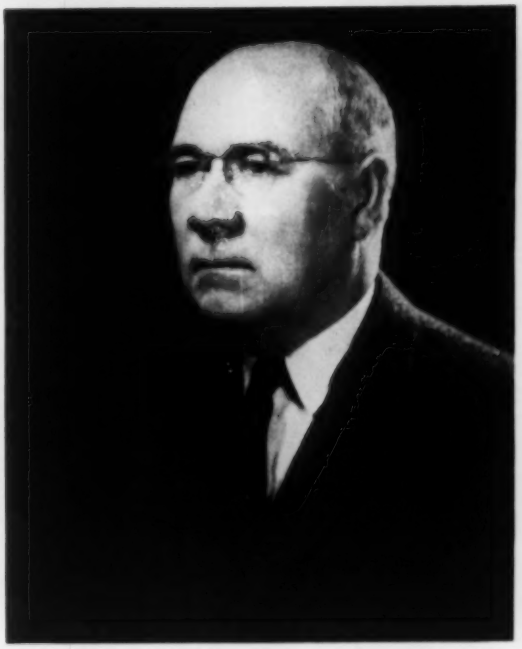
PRESIDENT'S MESSAGE



Our National Headquarters

By Howard P. Emerson

President of the American Institute of Industrial Engineers

Let's get acquainted with our National Headquarter's office and staff.

All the threads of contact with AIIE chapters throughout the country either originate in or flow through the National Headquarters at 145 North High Street, Columbus, Ohio. Your officers make most of their contacts through the National Headquarters office or with its help. Direct contacts of officers, directors, and committee chairmen with chapters or members are noted and recorded in the National Office. All records are kept there, meetings of the Executive Committee are held there, and money is received and expended through the Headquarters Office, which maintains close contact with the AIIE Treasurer, usually located in Columbus.

Officers and committee chairmen are helped in a thousand ways to carry out their responsibilities. This help may be in the form of suggestions, preparation and transmittal of letters, and compilation of reports, all requiring an intimate and thorough knowledge of policies, history, trends and actions of Executive Committee and Trustees meetings and Conventions. It is impossible to over-emphasize the importance of National Headquarters as the center of the web of AIIE relationships.

Here's how National Headquarters is organized:

Executive Secretary

The position of Executive Secretary and how it is filled are keys to the success of any professional organization such as the American Institute of Industrial Engineers. The Executive Secretary provides continuity. His advice, based on accumulation of information regarding past actions and thinking provides assurance that current action by Executive Committee or Board of Trustees will be in line with trends set by previous officers. That is why the Executive Secretary is an appointive office and serves as a full fledged member of the Board of Trustees and of the Executive Committee, also acting in the capacity of Recording Secretary for both.[1]

The Executive Secretary approves preparation of the agenda and records minutes of meetings of the Executive Committee and Board of Trustees. He assembles the necessary information for consideration and action on each topic, or arranges for the presentation of the information from committees assigned to report. He is the parliamentarian for the organization.

A major responsibility of the Executive Secretary is the operation of the National Headquarters, involving the selection and employment of staff. This headquarters office is under the direction of a Business Administrator, whose work and staff are described later on in this article.

The first Executive Secretary of AIIE was Wyllys G. Stanton, recognized also as founder of AIIE. The present encumbant, Joe Southern, followed as Executive Secretary beginning his duties in 1952, having served as Ass't. Secretary to Mr. Stanton for two years prior to that time.

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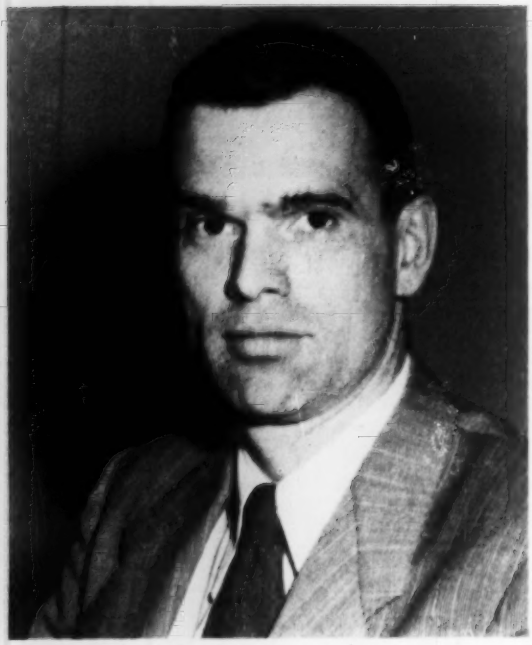
[1] The Board of Trustees meets twice a year, and delegates to the smaller Executive Committee authority to act between these meetings.



Joe Southern, *Executive Secretary*

The Institute is fortunate to have had the services without charge of the two men who have held this position. Until the hiring of a paid Business Administrator in 1955 the work was extremely time consuming. From the beginning it involved developing procedures, recommending policies, and helping build up AIIE until it has now become a mature going concern with established operating precedents. In providing information for Board action, both the Board and Executive Committee have relied upon the Executive Secretary for the assembling of complete data for their decisions. Mr. Southern while Executive Secretary and Secretary of the Board of Trustees and Executive Committee is in a position of neutrality to an extent, but this has not prevented him from making his views known and vigorously presenting his recommendations, but whether these views were adopted or not has made no difference in the objectivity with which Board actions have been carried out under his direction.

The Executive Secretary also has a major share in planning each year's AIIE program, since he collaborates with the Treasurer in preparing the budget.

The Board of Trustees and the 1956 Convention have authorized hiring a full time paid Executive Secretary now that our organization has matured to the point where such an officer can be supported from income. Until an outstanding man can be found for this position we will need to continue to rely on the contribution of services from our Executive Secretary, Joe Southern. The AIIE will always be in debt to him and his family for the contribution of time, energy and worry which he has contributed in the growth of AIIE.

Business Administrator

All headquarters work is handled by a full time paid Business Administrator, Don A. Trenwith, and a staff of four others, under the guidance of the Executive Secretary. Modern business methods have been installed. The Business Administrator attends meetings of such groups as the Council of Engineering Societies Secretaries (CESS), where the experience of older engineering societies can be drawn upon to build up an efficient administration for AIIE.

Operating a National Headquarters requires familiarity with the officers, committee members, directors and chapter groups of the entire organization. It requires personal interest in the growth of AIIE. Actions of Executive Committee and Board must be transmitted to those interested within the organization and answers to questions regarding the actions supplied. The National Headquarters Office is taking a greater part in stimulation of new chapters, and recommending areas where members at large have increased to the point where new chapters are justified. In addition to supervising the work of the National Headquarters office, the Business Administrator carries on a great deal of correspondence, helps compile all the statistical reports and aids the Treasurer in preparing

Don A. Trenwith, *Business Administrator*

and presenting financial reports and budget. He arranges for meetings of the Executive Committee and Board of Trustees, prepares agenda and announcements, gives information about the actions of the Executive Committee or Board of Trustees, transmits results of such action to all those concerned, receives copies of all internal and outgoing letters sent by any of the officers, directors or committee chairmen. Thus the Business Administrator has an important function in coordinating the activities of the organization, calling each person's attention to what another individual or committee is working on in related fields.

The Business Administrator is responsible for operating a modern office, using modern methods. He is usually the first point of contact of individuals wishing to start a new chapter or individuals wishing to affiliate with a group already organized. He advises as to the location of possible new chapters based on the number of members at large in an area. He must be familiar with regulations of the Engineer's Council for Professional Development since accredited curricula are those on which membership requirements are based. He maintains close contact with the so-called functional committees, such as the Membership Qualifications Committee (MQC), and with the Directors, especially the Director of Chapter Expansion.

Highlights of the Past Year's Headquarters Operation

1. Installation of a new billing system whereby dues are collected for both national and local chapters.
2. Installation of a new accounting system designed by former Treasurer, Frank Geyer.
3. Microfilming of all permanent membership records including original applications and actions pertaining thereto.
4. Representing AIIE at meetings of CESS (Council for Engineering Societies Secretaries).
5. Giving assistance in forming new chapters.
6. Installing use of multiple part forms for better service on membership applications.

Office Staff

An office staff of four people carries out the work of the AIIE under the direct supervision of the Business Administrator.

Subscription Clerk. This job involves handling the work connected with some 690 Journal subscribers, enrolling them as subscribers, billing, dropping subscriptions, handling correspondence and single copy orders. Part of the work of this position is to keep up records for 1300 student members during nine months of the year, maintaining student contacts and correspondence and transferring graduating seniors to Associate status.

Membership Clerk. This position involves responsibility for the processing of all applications for membership, maintaining all the records, making regular and special reports, and handling all of the correspondence. The Membership Clerk originates much of this correspondence. There has been an average of one hundred applications per month. The Membership Clerk reviews these for adequacy of information, refers them to the Membership Qualifications Committee keeping accurate records of the transmittal and subsequent receipt of these records. Chapters and applicants are kept informed of all actions on applications. This is a full time responsibility.

Accounting and File Clerk. Responsibilities of this position involve recording daily cash receipts and posting of cash transactions and membership and sales records. Membership payments alone run six thousand per year. In addition there is the sale of books, brochures, jewelry, subscriptions and bulk student chapter payments to account for. There is also the responsibility of maintaining record files and all storage filing. Accuracy and care are needed in this position.

General Clerk. This position involves changing addresses, posting changes to all the records, making new stencils and index cards. The work involves considerable typing and cutting of mimeograph stencils.

Summary of Functions

1. Maintains membership records and mailing lists.
2. Collects all national and chapter dues.
3. Makes monthly rebates of chapter dues.
4. Maintains financial records of individual members and of the National Organization and makes regular reports.
5. Handles Journal subscriptions. Today there are 613 paid subscribers, an increase of 50% over last year.
6. Sells all AIIE jewelry and membership certificates.
7. Supplies forms, membership kits and information as requested by Chapters, National Officers, Directors and other individuals or organizations.
8. Maintains records and correspondence on all new applications, cooperating with chapters and the National Membership Qualifications Committee. An average of 100 applications per month pass through the office. During December, 197 new applications were received; the lowest month was August with 36.
9. Distributes Executive Committee and Board of Trustee Minutes to approximately 150 individuals, along with pertinent information about changes in procedure and new information on availability of forms and supplies.
10. Prepares, mails out and tallies results from all election and constitution change ballots, also arranges all special mailings to members.

Information Available from National Headquarters.

1. Starting a new student chapter.
2. Starting a new senior chapter.
3. Membership requirements and dues rates.
4. Location of nearest chapters.
5. Members available to form the nucleus of a new group in an area.

6. Subscription information for the JOURNAL OF INDUSTRIAL ENGINEERING.

7. Advice as to where Industrial Engineering is taught.

8. Explanation of "What is Industrial Engineering."

9. Information to interested members of possible openings for Industrial Engineers and to employers of member's names who have indicated an interest in a new position. The Columbus Chapter is working with Headquarters to provide the membership with a Job Opportunities Information Service as an aid to fulfilling the needs of employers and members seeking employment.

Use Your National Office

The purpose of this message has been to provide information on some of the functions and activities of the National Headquarters so that all members will (1) recognize the contributions which members of this devoted group makes to the growth of AIIE and (2) will take fullest advantage of the facilities they make available.

I. E. OPPORTUNITIES

Inquiries received indicate that many sources of employment information are seldom tapped. These include: The United States Employment Service, Civil Service, Universities and Colleges of past enrollment, technical trade publications, classified ads in newspapers of the desired area, technical employment agencies (employer pays the fee in most cases), and many others. Much of this information, including books on how to prepare resumes and conduct employment contacts, is available at your local library. Use all these services in determining the best opportunities. Space will not permit listing all positions and men available, but each inquiry will be given confidential and individual attention. Direct your correspondence to Malcolm M. Kreske, P. E., Chairman, I. E. Opportunities Committee, American Institute of Industrial Engineers, Inc., 145 N. High Street, Dept. OP, Columbus 15, Ohio.

The U. S. Civil Service is possibly one of the most overlooked employment considerations and probably offers the greatest opportunity for public service. The Hoover Commission has emphasized the need for the industrial engineer in Government. Salaries start at $4,480 in most GS 5 openings and exceed $10,000 in many positions of higher responsibility. Opportunities are available in various branches of the Government, particularly the Army, Navy and Air Force in and outside the United States. Information concerning positions in your area, salary ranges and application forms are available at your nearest civil service commission or local Post Office. Contact direct, branches of the Government or the U. S. Civil Service Commission, Washington, D. C., about specific types of work and locations desired. The I.E. opportunity service will continue to process all individual requests. Recommended reading is "Professional Status of the Engineer in Government" from the July 1956 issue of the "American Engineer" published by the National Society of Professional Engineers.

Please provide full information of your requirements concerning men or positions available as the published listings are but a small portion of our complete files. This is your free service conducted for the benefit of the Industrial Engineering Profession.

Direct your correspondence to Malcolm M. Kreske, P.E., Chairman, I.E. Opportunities Committee, American Institute of Industrial Engineers, Inc., 145 N. High Street, Dept. OP, Columbus 15, Ohio.

MEN AVAILABLE

M-7 BA, 15 yrs. exp. Production control, methods, standards and procedures. Organized, supervised and trained I.E. section. Executive and policy making background plus legal training. Looking for position of responsibility and authority requiring this background. Salary Req. $12,000.

M-8 BSMetE, MSIE, I.E. Supervisor Exp. in cost estimating and analysis, work simplification, standards and incentives. Age 27. Desire position with small metal working plant, preferably foundry.

M-9 BSIndM. 7 yrs. Exp. Cost estimating, methods, layout, incentives, union grievances, suggestion systems, production control, job evaluation, personnel and safety programs in metal working and processing industries. Anywhere for genuine career opportunity.

M-10 BSIE, MSIE, EIT (N. Y. and Ohio) 1st Lt. USAF with Hq. Air Materiel Command. 1 yr. exp. as plant I.E. in Electric motor firm. Teaching exp. in production control. Desires challenging growth position. Will relocate in U. S. or abroad right opportunity available April 1957.

M-11 BSIE. Advanced management study in army staff schools and automatic data processing systems. Exp. in teaching, marketing research, supervision, methods and plant layout. Desired location, Northeastern U. S.

M-12 BSIE, MSE, P.E. Age 35. Grad B.A. work. Varied I.E. Production and maintenance exp. Staff and line administrative background. Desire position with major responsibilities. Prefer Southern U. S.

POSITIONS AVAILABLE

P-9 Assistant and Associate Professor teaching positions at schools in the East, Midwest, South and Puerto Rico. Opportunities for research, consulting and course development. Terms beginning in January and September 1957 with summer teaching available. Exp. and academic requirements vary.

P-10 Air Force, Army and Navy civilian branches. Work in plant development, layout, work measurement, methods, production control and standard costs. Salary ranges $4,480 to $11,610. Many positions available in the GS 9 grade $6,115 and up.

P-11 Airline companies. Jr. and Sr. I.E. openings available in management studies of operations such as office, ground, flight, maintenance, overhaul and administrative procedures development. Exp. desired in machine shop, maintenance, material handling, plant layout, etc. with emphasis on human engineering. Salary open.

P-12 Primary and secondary metal industries need men with fabricating exp. for expanding production facilities.

P-13 Electronics Co. I.E. degree and 2 to 5 yrs. electronics exp. in manufacturing, processing, methods, standards, work measurement and estimating in fabrication and assembly. Salary range $5,000 to $10,000.

The Design of In-Process Storage Facilities

By Dr. Eugene Richman

*Associate Professor, Department of Industrial Engineering University of Southern California**

and

Salah Elmaghraby

Research Assistant, Cornell University

One of the most difficult of Plant Layout and Design problems is the design of in-process storage facilities. A primary problem is the allocation of space and storage equipment at all between-operation phases of the manufacturing process.

A usual approach to this problem calls for the consideration of storage areas preceding operations in terms of providing space for the necessary quantity of material or parts to supply the following operation for a specific period of time. In the case of a raw stores area preceding the first operation, such factors as the desired rate of production, the available rate of supply, the projected production forecast, the estimated reliability of supply and the capacity of the machines involved would be considered. For between-operations stores, usually called banks or floats, some of the above factors would be considered, and in addition, emphasis would be placed on the likelihood of a work stoppage at the preceding operation and on an estimate of the expected average delay time.

The actual quantities desired are then determined by *consideration of all of these pertinent factors*. This, of course, requires a great deal of intuition and much seasoned judgement to provide satisfactory results. The literature on this subject all appears to lead to the same conclusions and no definite or quantitative approach to these design problems is offered.

An attempt shall be made here to indicate an approach to the solution of one typical in-process storage problem with the aid of Queueing Theory and Probability Theory.

Example Straight Line Production:

Here we shall assume a simplified straight line production situation where machines and equipment have been chosen in order to achieve balance, and the production of each operation feeds directly into the following one, along prescribed transfer lines. We shall be concerned with the between operation storage system. This directly relates to between operation materials handling since in straight line production, storage between operations is often storage in transit, i.e. storage and handling are performed simultaneously as in the case of conveyors between operations.

A typical example would be a bottling plant where the bottles are conveyed through the following operations:

1. Washer
2. Syrup filler
3. Soda water filler
4. Capper
5. Shaker

This is a simple case of single line production, which does not branch, and through which the product passes from one operation to the other until it is delivered finished at the end. Theoretically, the output of operation 1 should feed directly into operation 2, and so on, so that virtually no space is needed between operations. The output of the whole line should be the specified output, which is determined by the motors or the speed of the conveyor.

However, practically, this seldom happens. Temporary adjustments between machines are usually required. Our problem is to design the proper lengths of conveyor between operations or phases, taking into account the probable fluctuations of output at the different operations. We shall assume that it is feasible that one machine (or phase) stops temporarily while the conveyor continues accumulating work in front of it up to a certain maximum, after which an automatic switch will stop the line. This arrangement is met quite frequently in practice.

A practical limitation affecting the probability of accumulating bottles is the fact that the total output of operation 2 *cannot* exceed the total output of operation 1, though it may be less. Also, the output of operation 3 cannot exceed the output of operation 2, though it may be less, and so on.

Putting it in mathematical wording, we know that the output of operation 2 is 'conditional' on the output of operation 1, etc. Thus,

$$P_{x_2 x_1}(x_2, x_1) = \frac{P_{x_1 x_2}(x_2, x_1)}{P_{x_1}(x_1)}$$

where:

$P_{x_2 x_1}(x_2, x_1)$ is the probability of producing x_2 units in operation 2, having produced x_1 units in operation 1.

$P_{x_1 x_2}(x_1, x_2)$ is the probability of producing x_1 units in machine 1, and x_2 units in machine 2.

$P_{x_1}(x_1)$ is the marginal probability that machine 1 will produce x_1 units.

* Formerly associate Professor Industrial and Engineering Administration Dept., Cornell University

Multiplying both sides of the above equation by $P_{X_1}(x_1)$, we get

$$P_{X_1,\,X_2}(x_1, x_2) = P_{X_1}(x_1) \cdot P_{X_2/X_1}(x_2/x_1)$$

But since, by hypothesis, the only form of dependence of machine 2 on machine 1 is the fact that it cannot produce more than machine 1, we deduce that

$$\begin{aligned} P_{X_2/X_1}(x_2/x_1) &= P_{X_2}(x_2) \quad \text{for } x_2 \leq x_1 \\ &= 0 \qquad\quad\ \ \text{for } x_2 > x_1 \end{aligned}$$

Thus the probability of producing x_1 units on machine 1 and x_2 units on machine 2 is given by

$$\begin{aligned} P_{X_1,\,X_2}(x_1, x_2) &= P_{X_1}(x_1) \cdot P_{X_2}(x_2) \quad \text{for } x_2 \leq x_1 \\ &= 0 \qquad\qquad\qquad\ \ \text{for } x_2 > x_1 \end{aligned}$$

For any value of x_2, the output of machine 2, we sum both sides over all possible values of x_1, and we get

$$\begin{aligned} \sum_{x_1} P_{X_1,X_2}(x_1, x_2) &= \sum_{x_1} P_{X_1}(x_1) \cdot P_{X_2}(x_2) \\ &= P_{X_2}(x_2) \cdot \sum_{x_1} P_{X_1}(x_1) \\ &= P_{X_2}(x_2) \end{aligned}$$

Knowing the probability of the output of operation 2, we can now move on the operation 3, and so on, to calculate the probability of output after every operation or phase.

In order to show a specific application of this approach, we shall assume that our bottling plant line was designed for an output of 96 bottles per minute. This may be expressed more conveniently as 16 bottles per 10 second interval. Suppose that previous records of such equipment are available, from which the productivity of each machine is known with respect to time. This will give us a probability curve for each machine indicating the production of x units y percent of the time. For the sake of simplicity of calculations, it will be assumed that all our five operations have the same variability, and that the output of each machine is closely approximated by a Poisson distribution with a mean of 16, and a standard deviation of 4.

This means that during any given time interval the Washer (Operation 1) may process more or less than 16 bottles, but on the average, will process 16 bottles per time interval, in this case in 10 seconds. The expected percent of the time that the Washer would process any specified number of bottles per interval may be determined from the Poisson distribution and is shown as Column 2 of Table 1. For example, 3.4 percent of the time 10 bottles would be processed during the 10 second interval, 9.9 percent of the time 16 bottles would be processed, and 5.6 percent of the time 20 bottles would be processed.

If, during any given time interval of 10 seconds, the Washer processes exactly 10 bottles, then the Syrup filler (operation 2) can process 10 or fewer bottles, but no more, and each with a certain probability. Using the conditional probability equations mentioned previously, it is then possible to determine the expected percent of the time any specified number of bottles will be processed during a time interval at each succeeding operation. This is shown for all operations in table 1. For example, it is seen that operation 1 will process between 13 and 18 bottles 55% of the time and operation 5 will process between 6 and 10 bottles about 71% of the time.

TABLE 1

Expected Percent of the Time for Processing Bottles (Per 10 second interval)

Col. 1 No. of Bottles Processed	Expected Percent of Time for Processing				
	Col. 2 Operation 1	Col. 3 Operation 2	Col. 4 Operation 3	Col. 5 Operation 4	Col. 6 Operation 5
5	0	0	.867	3.26	7.368
6	0	.7	3.22	7.47	12.453
7	0	2.0	5.69	10.16	13.962
8	1.2	4.35	8.96	13.35	16.157
9	2.1	6.78	11.90	15.20	15.442
10	3.4	9.36	13.90	15.00	13.059
11	5.0	11.53	14.38	13.07	9.492
12	6.6	12.61	12.84	9.61	5.734
13	8.2	12.62	10.47	6.40	3.145
14	9.3	11.40	7.61	3.66	1.407
15	9.9	9.50	4.95	1.81	.510
16	9.9	7.30	2.90	.743	.129
17	9.3	5.12	1.50	0	0
18	8.3	3.32	.575	0	0
19	7.0	1.97	.173	0	0
20	5.6	.99	0	0	0
21	4.3	.37	0	0	0
22	3.1	.11	0	0	0
23	2.1	0	0	0	0
24	1.5	0	0	0	0

Thus, as to be expected, the production along our line progressively *decreases*. The average output of the last machine is about half that of the first one, and consequently, we would deduce that the necessary between-process storage space required diminishes with the diminishing output.

The above results, however, pertain to one type of line production system, viz., a system such as the one under consideration. There are other line production systems in which the opposite result may be reached, and the output actually *increases* along the line. This would be the case, for example, of added material in each operation, where the volume of the product physically increases. Under such circumstances, the machine loss in productivity at each phase will be offset by the increase in physical volume.

On the surface, such a situation seems to be radically different from the example treated in this paper. But in fact, the approach to its solution is identical with the approach presented here, with some slight modifications in the calculations.

After taking into cognizance the fact that the length of the conveyor, i.e. the capacity of the between-process storage space need not be constant along the line, we now proceed to calculate these specific space requirements using Queueing theory.

Queueing theory has proved to provide a valuable model for analyzing systems in which services are demanded from a limited amount of facilities. Whenever the services are

demanded in a non-regular manner, the demand for these services can intermittently overtax the capacity of the facilities, and a queue or waiting line be formed. In this example, the machines may be thought of as servicing units which are serving the bottles approaching them on the between stations conveyors. The capacity of each machine (Servicing rate $= \mu$) was given as 1.6 bottles per second. The arrival rate at each machine differs however, since, as shown previously from the conditional probability calculations, the production along the line decreases.

Consider the space between the second and third operations. The output of machine 2 is approximately a Poisson chance variable with mean 1.28 bottles per second. (The value 1.28 bottles per second is calculated from the output of machine 2 from Table 1 by multiplying each value in Col. 1 by the corresponding value in Col. 3, adding these values and dividing the result by the total of Col. 3.) The average *capacity* of machine 3 is 1.6 bottles per second, its output in turn is also distributed as a Poisson variable. Applying the results of Queueing theory for the case of constant average rate of input $\lambda = 1.28$, and a constant average rate of output $\mu = 1.6$, we have:

$\bar{n}'$ = Average expected number of bottles waiting in front of machine 3

$$= \frac{\alpha}{1-\alpha}$$

$$= \frac{.8}{.2} \text{ [where } \alpha = \text{servicing factor]}$$

$$= \frac{\lambda}{\mu} = \frac{1.28}{1.6} = .8$$

$= 4$ bottles.

$$\text{and variance} = \frac{n}{1-\alpha}$$

$$= \frac{4}{.2}$$

$$= 20$$

i.e., a standard deviation of $\sqrt{20} = 4.47$

The probability that the length of the queue will be any given value n is given by the equation:

$$P_n = (1-\alpha)\alpha^n$$

The confidence interval for any value of α may be obtained by summation of the probabilities in the tail of the above distribution beyond, say, two or three standard deviations from the mean.

In this case, we can be confident about 94 percent of the time that the length of the conveyor between machines 2 and 3 will be adequate if it is chosen to accommodate $(4 + 2 \times 4.47) = 13$ bottles.

Consider next the last two operations. As a first approximation, assume that the output of the 4th machine can be represented by a Poisson variable of mean equal to .958 bottles per second. This mean is calculated as explained previously from the output of machine 4 presented in table 1. The average capacity of machine 5 is (according to assumption) 1.6 bottles per second, and its output is assumed to follow a Poisson distribution. Applying the same formulae again, we find that:

$$\alpha = \frac{\lambda}{\mu} = \frac{.958}{1.60} = .599$$

$$\text{therefore } \bar{n} = \frac{.599}{.401} = 1.495$$

$$\text{and the Variance is} = \frac{1.495}{.599} = 2.5$$

i.e., a standard deviation $= 1.58$

Therefore, in order to be about 94 percent sure that the length of the conveyor between machines 4 and 5 will accommodate the output of machine 4 without congestion, we choose its length to be

$$(1.495 + 2 \times 1.58) = \text{app. 4 bottles.}$$

Thus we see that the required between-operation storage space declines sharply from about 13 to 4 bottles for the same confidence interval. However, there were two important system assumptions involved in our approach which led us to the specific quantitative answers obtained.

First, we assumed a Poissonian input and output for each machine, even when we knew that the input was not exactly Poissonian. The question of how much error was introduced by such an assumption is beyond the scope of this paper. There is little doubt that in the case of severe deviations from Poissonian distribution, which is utilized here for the simplicity of the calculations, more sophisticated mathematical models can be employed. Reference 2 in the Bibliography gives full details of these other models.

Secondly, in our example, the *capacity* of all the machines in the production line was assumed to be the same. This, together with the variable productivity of each machine, produced the shrinking between-phase storage requirements. Had the capacity of the machines been chosen differently, we would have attained different results. If, for example, the capacity of the machines progressively decreased in proportion to the decrease in the *output* of the preceding machine, we would have obtained the *same* storage capacity between any two phases.

We stress these assumptions in order to emphasize our intention to present a possible approach to the design of in-process storage problems rather than a specific solution to such a problem. It is hoped that this discussion will help to stimulate the much needed development and research in this area.

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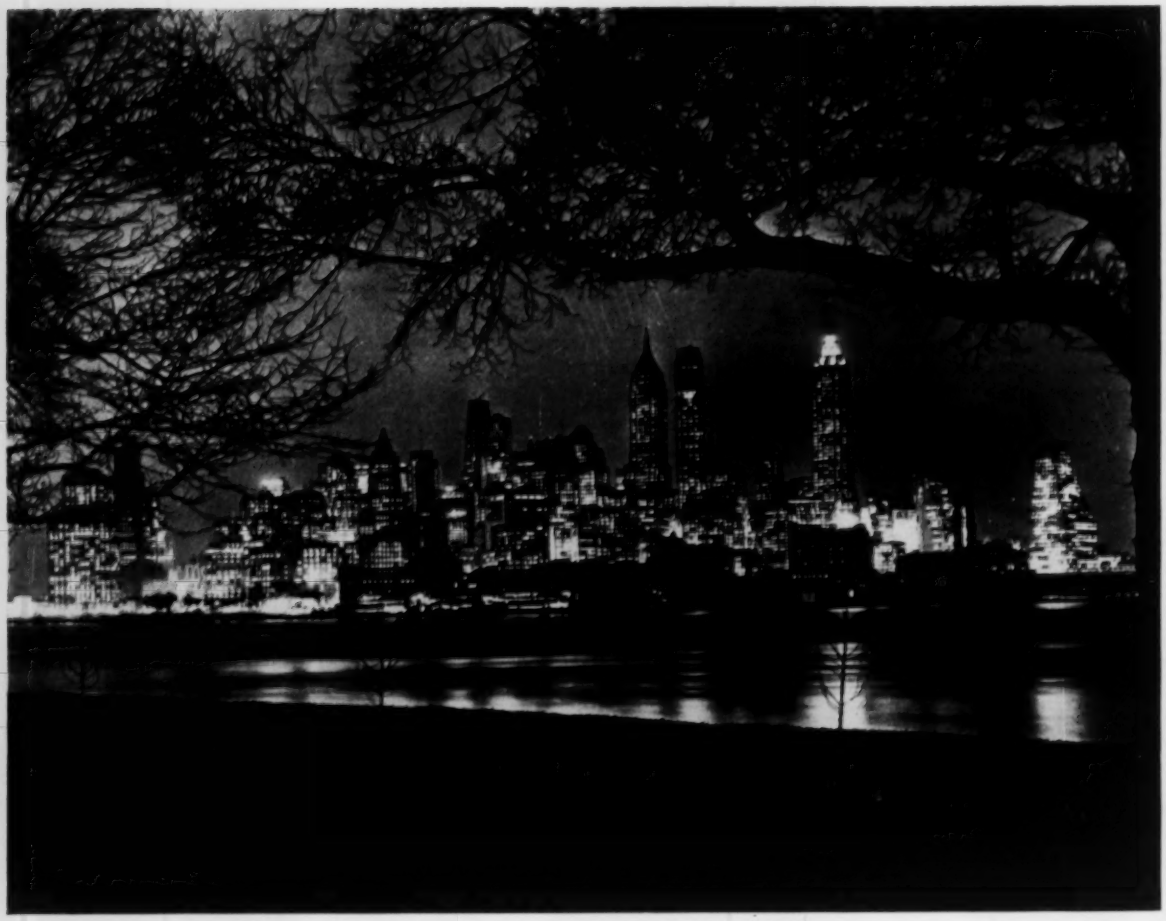
(2) Kendall, D., *Some Problems in the Theory of Queues*, Royal Statistical Society Journal, B, Vol. 13, No. 2, 1951.



New York—The AIIE Convention City in 1957

When industrial engineers from all over the country arrive in New York to attend the 8th Annual Conference and Convention next May 16, 17, and 18, there will be, in addition to the excitement of the Conference, the excitement of visiting New York City—the city that attracts 13,000,000 visitors each year.

Each year the American Institute of Industrial Engineers, the sole national professional organization of industria engineers, holds the major meeting of the year for the profession:

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The coming Eighth Annual Conference and Convention will be held in:

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Electronic Data Processing Comes to Time Study

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and

Travers Auburn, P.E.*

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The title of this article could suggest any number of humorous cartoons and especially one showing a weird looking mechanical ogre with flashing red and green eyes peering over the shoulder of a much harassed workman. The average workman, not acquainted with the modern techniques of setting time standards, may well have that conception, but to the Time Study analyst, whose job it is to determine the correct time necessary to perform a given task, the problem is a little more involved than to merely note the time a particular operator happens to be taking while being observed by the analyst. Time study, even at its best, is still far from an exact science, consequently the engineer, trained in the exact sciences, will not be satisfied until Time Study has reached a degree of refinement approaching an exact science within his limits of practicability. To that end he has broken down human tasks into standardized elements which can be assembled in various combinations to cause any task to be performed. He has scientifically studied and analyzed each of those elements in order to determine their respective time values, some constant and others variable. Fortified with the above tools, the Time Study analyst need only to concern himself with the determination of those elements necessary to perform a given task, assign each its correct time value, and calculate the time standard. Thus, an expert analyst, familiar with a certain section or department, can sit at his desk and calculate ninety percent of the time standards coming to him for analysis.

The question is frequently asked if Time Study analysts ever time study themselves and the answer is "very definitely". From the above it can be seen that the analyst's job has become far more complicated than the mere timing of an operator in the act of performing his given task. His job, therefore, is definitely one which also needs to be time studied and analyzed and to that end tools have been devised to simplify it and thus increase his own production. His tools may consist of a catalogue of standardized elements with their respective time values, tables of variables, graphs, nomographs, formulas, pre-printed forms, and many other means designed especially to reduce his own work and thereby increase his production. In this category may be included carefully written operation sheets numbering each task to be performed and spelling out exactly what work is to be done.

Conventional punched card equipment came into the Time Study picture only as a means of expediting various analyses frequently requested of Industrial Engineers. By preparing a punched card for each operation, showing not only the time value but various other pertinent data, automatic analyses could be made of manpower requirements, machine utilization, inventory values, shop efficiency, etc. not to mention the availability of a frequent tabulation of current time standards, which in our case number over 200,000. Thus, when Management asked Industrial Engineering's opinion on the advisability of using the latest Electronic Data Processing Machine, the first thoughts were, naturally, along the lines in which business machines were then being used. However, after learning more about the machine's capabilities, it was immediately suggested that it might be used for alleviating the work of the Time Study analyst and thus speed up his production. It was reasoned that if the machine could store the entire contents of the manual of catalogued standard elements together with all its graphs, formulas, and procedures for determining the values of the various elements, it would certainly save time in calculating and processing a standard.

Data Handling Ability

Before discussing in detail the method of establishing a time standard by electronic data processing it might be in order to outline some of the procedures necessary to set up and organize a data processing project.

Operation of electronic data processing by high speed digital computers is controlled by coded instructions stored in the memory of the machine. These coded instructions are known as the program and are prepared by a programer familiar with converting the problem into machine language. Electronic data processing machines act on about thirty, to one hundred basic instructions, depending on the type of machine. The sequence in which these instructions are issued is determined by the pro-

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grammer and the vast amount of combinations made available by the sequential array of these instructions gives the machine its extensive logical and arithmetical ability.

At the time of development of this project (1954) most electronic data processing equipment in general use was designed for engineering and scientific applications. It was later (1955) that machines better suited to commercial and industrial applications became available.

At that time there was an immediate need to establish approximately 100,000 inspection time standards and, even though an order were placed immediately, the new E.D.P.M. machine would not be available for at least a year. It was known, however, that the Research Department had a high speed digital computer which might possibly be used until the new machine arrived; providing, of course, they had sufficient machine time and were agreeable to running such a unique problem. Not only were they agreeable, but rather anxious to tackle it and with their very competent staff of experts programmed the operation herein explained.

In most engineering and scientific problems the statement of the problem and the procedures for its solution have been rigidly formalized by the science itself. Although the amount of calculation may be very sizeable, most problems, however complicated, can be reduced to polynominal form, and stated with the use of a limited number of symbols or numerical data, the required answers also falling into the same category. An illustration of a typical problem where the ratio of input-output time to the calculating time is small might be the solution of a 40th order system of simultaneous equations. If the machine generates the coefficients of the system, the input-output ratio to calculating time might be in the order of two minutes to one half hour.

In the solution of commercial and industrial problems the converse is true. The data to be processed is vast in comparison to the calculations to be made. The calculation of a time standard for example being measured in milliseconds.

Machines of the above type were designed to handle large volume input and output; however, since they were not available, it was necessary that auxiliary equipment be used to assist in overcoming this handicap.

Most commercial and industrial routines also are dependent upon procedures that are rarely standardized or formalized to the degree that their solution is automatic. It is, therefore, necessary that before such a project be submitted to data processing it's procedures be minutely formalized.

We developed our inspection time study standard data manual to the point that, in addition to the predetermined tabular time values, every technical and accounting procedure was included. The programer then in conjunction with the industrial engineer converted these procedures into machine routines.

The final program contains approximately 4000 individual instructions which, together with the tabular time values, occupy about 8000 memory positions in the machine.

Reference to Fig. 1 will illustrate the organization of

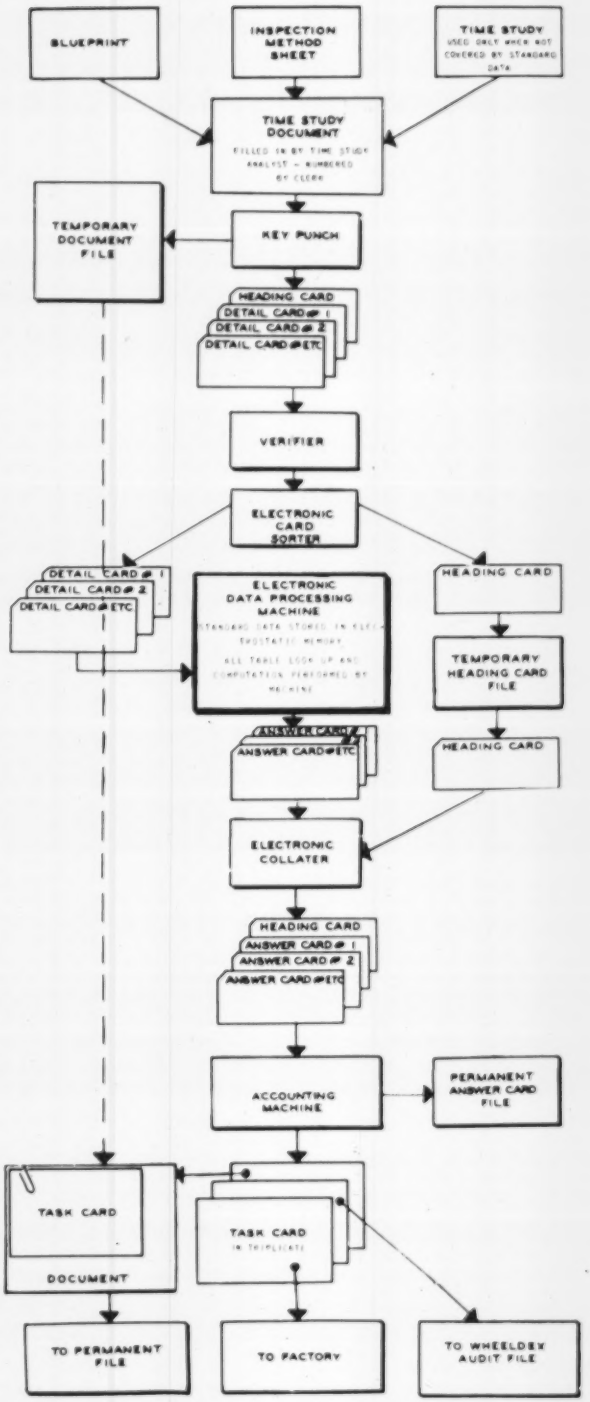


Fig. 1. Organization of Data Processing

the data processing and general procedure for establishing an inspection time standard.

Similar to most machine shop Time Study practices the analyst refers to the blueprint and method-sheet to determine the elements to be allowed. He prepares a specially designed form called a document. The term document is used here in the conventional data processing sense to mean the original recorded information to be processed. The procedure to be used in preparing this document is described later. The information from the document is then key punched and verified. The cards are sorted to separate the heading card which carries identifying information not required by the computer for calculating purposes. After calculation the heading card is collated with the answer cards and placed in an accounting machine which prints the answers on a triplicate task card in the form required for factory and audit use. See Fig. 5.

FIG. 2. Former method required copious writing in the preparation of tabulation sheets, one for each task.

FIG. 3. Former method required standard task cards for each task.

In order to visualize the large time savings occasioned by this system we have briefly outlined the former method of establishing inspection standards. Figures 2, 3, and 4 illustrate this former method. The analyst, after reference to the method or process sheet and blueprint, selects from the manual, containing the standard time data, the time required to perform each element of the job. He then records on a tabulation sheet for each task all elements required for that task. After the addition of proper allowances the complete standard was derived. It was also necessary to prepare a task card for each task for use in the factory and an audit card giving the complete standard for cost accounting, wage incentive or other auditing procedure.

The new method, in addition to simplifying this routine, has made possible calculations heretofore so time consuming they were impractical to make. The most important of these is the calculation of multiple time standards per task. In inspection operations the setup or preparation for the job is performed by the inspector and, therefore is an integral part of the job. It can readily be seen that under the usual procedure of establishing the standard for the average lot size, errors are introduced when lots are smaller or larger than this average. The rapidity of elec-

tronic calculation is such that no extra time is consumed in calculating the standard for several lot sizes.

Another illustration of this principal is the calculation of standards where statistical sampling inspection is in effect. Under attribute sampling plans the quantity inspected is determined by the lot size. As the relationship is non linear, complex curves must be derived in order to determine the standard. Here again we have the need for multiple standards for the same task. For straight percentage inspection the task standards are set for four different lot sizes and for statistical sampling we use eleven which parallel the sampling plans.

PWA F1831

PART NO. 77344 PART NAME Shaft Ass'y Blower Int.

OPER. NO.	TASK NO.	TASK NAME	TOT. ALL'D HRS. SHOP	PUR. S. F.	PUR. COMP.
	1	Inspection before Carburize	.0403		
	2	Inspection before Assembly	.0698		
	3	Light Oil and Box	.0032		
	4	Inspect after Assembly	.1696		
	5	Oil and Box	.0032		
	6	Final Inspect.	.0498		
	7	Oil and Box after final assy.	.0035		
		Total	.3391		

DEPT. NO. 978-111

FIG. 4. Hand prepared audit card used in former method for accounting purposes.

Documentation Of Data

We now come to that part of the job which directly concerns the Time Study Analyst, i.e. the preparation of the document. In order to assist the Time Study analyst in the preparation of the document we have prepared a handbook of instructions. However, once these instructions have been memorized, the procedures become routine and reference to the handbook is usually unnecessary.

Reference to Fig. 6 will illustrate that the document is composed of three sections: "Heading Card", "1st Detail Card" and "standard Coded Elements". The following information, for each section, is supplied by the analyst.

Heading Card

The heading card which is electronically sorted from the detail cards, thereby saving much card reading time, contains the document number, department number and lot classification. The document number, columns 1 thru 5, is not filled in by the analyst, but by a clerk who keeps a numerical listing of all documents. The department number, columns 6 thru 14, requires nine columns, for in addition to the regular department designation, the area location is indicated. The lot class, columns 15 thru 19, is the medium which determines the multiple standards for all parts as noted before. Lot class, when referring to straight percentage inspection, means the largest single quantity for any specific part, which will be subject to inspection.

The following lot class table illustrates the lot classifications available.

TABLE I

Range of Lot Classes

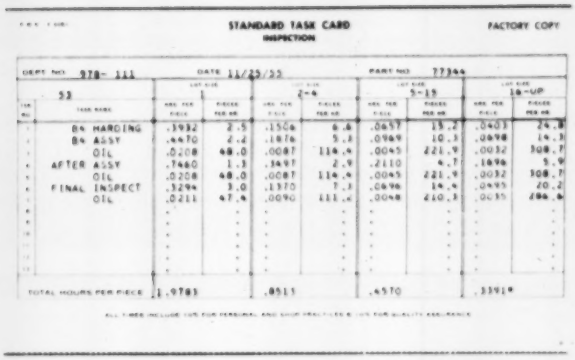
Lot Class Codes	Range Printed on Task Card					
00010	Range		1	2	3–5	6–10
	Range	Average	1	2	4	8
00050	Range		1	2–4	5–15	16–50
	Range	Average	1	3	10	33
00200	Range		1	2–8	9–31	32–200
	Range	Average	1	5	20	116
00499	Range		1–3	4–12	13–67	68–500
	Range	Average	2	8	40	284
01030	Range		1–11	12–48	49–351	352–up
	Range	Average	6	30	200	1000
00000	Range		1–10	11–65	66–110	111–180
	Range	Average	5	38	88	145
00000	Range		181–300	301–499	500–799	800–1299
Cont.	Range	Average	240	400	665	1050
00000	Range		1300–3199	3200–7999	8000–22000	
Cont.	Range	Average	4500	5600	15000	

All parts inspected by straight percentage plans are placed in one of the first five lot classes by the analyst, and the code from Table I entered on the document. This entry instructs the tabulator what lot sizes should be printed on the task card. The code entry for parts that require statistical quality control multiple standards is 00000. The tabulator is automatically instructed by this code to place the answers on the statistical quality control task card with the eleven preprinted lot sizes. The part number, columns 20 thru 28, includes provision for all standard part numbers.

1st Detail Card

The 1st detail card is differentiated from the subsequent detail cards insofar as it contains information to be used by the computer, either for card identification or for factors required in computing the standards. The card number, columns 6 and 7, requires no entries but serves only as a reminder to the key puncher that each detail card must be numbered consecutively for any one document. Columns 8 and 9 are for control punches by the keypunch operator to denote the start of a new document. The key punch operator punches a continuous series of documents until she has finished the day's work. When the cards are read into the computer, the control punch at this point indicates to the machine that the previous cards are for the same standard. It is interesting to note

that the program is so designed that there is no appreciable lag at this point between the last card read in from a document and the first answer card punched out. Columns 10 thru 19 are not printed on the document since the key puncher duplicates the document number and lot class from the heading card at this point. This saves the analyst from making two entries. The document number has to be duplicated so it will be punched on all answer cards for identification. The lot class, when duplicated here, enables the computer to select the mid-points of the multiple lot sizes for which the standards are to be computed. This is the range average from Table I. The department code, columns 20 and 21, is a two digit code number obtained from a Table designating each department, such as 01, 02, 03 . . . . 99. In conjunction with the next entry "Task Constants" it selects the correct preparation time for the required task. In addition, it is carried by the computer to items which identify certain constants for walking time and horizontal hoist time. Task constants, columns 22 thru 34, list thirteen task numbers. At the upper right of the document is a small preprinted table which gives code numbers 0 to 5, each of which identifies a general type of task. The code 0 applies to a task where no preparation time is needed. Codes 1 thru 5 are identified respectively, bench inspection, line inspection, specific type inspection, marking, and preservation. Since the preparation time required is a function of the type of task and the department where it is performed, this department code and task code are used by the computer to determine the time which is then prorated by the various lot sizes. The analyst starts with No. 1 and enters the proper code number from this table in column 22. For task No. 2 a code number is entered in column 23. This is repeated for as many tasks as there are for the particular part. When the number of tasks is less than thirteen, the remaining columns up to 34 are filled in with zeros. You will recall that the weight and largest dimension, columns 35 thru 38, were entered on the 1st Detail Card, so that whenever either of these values is the determining variable for a standard coded element, it is applied by the computer without further designation by the analyst. The task name codes, columns 39 thru 65, are two digit code numbers which refer to the specific task names that are to be printed on the task cards. Space is provided to enter thirteen of these code numbers, which are obtained from a Table in the handbook. The numbers 1 thru 13 show the numerical sequence of the tasks as they will appear on the task cards. If less than thirteen tasks are required, a line is drawn thru all remaining columns. The computer translates these codes into names. Column 45 is left blank for identification purposes in the computer.



STANDARD TASK CARD
INSPECTION

FACTORY COPY

DEPT NO. 978- 111 DATE 11/25/52 PART NO. 77344

TASK NO.	TASK NAME	LOT SIZE 1 HRS. PER PIECE	LOT SIZE 1 PIECES PER HR.	LOT SIZE 2-4 HRS. PER PIECE	LOT SIZE 2-4 PIECES PER HR.	LOT SIZE 5-15 HRS. PER PIECE	LOT SIZE 5-15 PIECES PER HR.	LOT SIZE 16-UP HRS. PER PIECE	LOT SIZE 16-UP PIECES PER HR.
53									
1	B4 MARKING	.3932	2.5	.1506	6.6	.0657	15.2	.0403	24.8
2	B4 ASSY	.4470	2.2	.1876	5.3	.0969	10.3	.0698	14.3
3	OIL	.0208	48.0	.0087	114.9	.0045	221.9	.0032	308.7
4	AFTER ASSY	.7460	1.3	.3497	2.9	.2110	4.7	.1896	5.9
5	OIL	.0208	48.0	.0087	114.9	.0045	221.9	.0032	308.7
6	FINAL INSPECT	.3294	3.0	.1370	7.3	.0696	14.4	.0495	20.2
7	OIL	.0211	47.4	.0090	111.1	.0048	210.3	.0035	286.6
8		-	-	-	-	-	-	-	-
9		-	-	-	-	-	-	-	-
10		-	-	-	-	-	-	-	-
11		-	-	-	-	-	-	-	-
12		-	-	-	-	-	-	-	-
13		-	-	-	-	-	-	-	-
TOTAL HOURS PER PIECE		1.9783		.8511		.4570		.3391*	

ALL TIMES INCLUDE TIME FOR HANDLING AND SHOP INSPECTION & TIME FOR QUALITY CONTROL

FIG. 5. New method uses machine printer task card prepared in triplicate and listing all tasks.

completely punch the document, each card containing eighty columns.

The general classifications of the coded elements are printed in red, and for ready reference, are arranged in the same order on the document as they are in the Handbook and The Standard Data Manual. These classifications are sub-divided into specific gages and items that are lettered in green. Each element is assigned a code number which identifies the tables, set up times, and variables pertaining to that element in the computer.

The large number of gages and items make it impossible for all of them to be preprinted on the document. The Handbook however, contains a complete index of machine coded elements, any of which can be transferred directly to the document by the Analyst.

Each of the coded elements has either two or three 5 digit fields in which to enter information. A digit represents one column, and a field is made up of five columns.

From left to right in the first field is entered under task, the number of the task for which the element is used. It is written as 01, 02, . . . 12, . . . 13, etc. The code is a pre-printed number assigned to a specific element which completes the field. Many numbers are duplicated because the same element may be used more than once in processing the part.

The second field contains the number of basic checks and the type of plan to be used. These two items make up the occurrence of the element. Basic checks, when referring to gages, are the number of times a specific gage is used in one sequence, where the time for each check is the same as the first one. When referring to elements other than gaging, the basic checks are the number of times the element is performed for any one task. This is written as 01, 02, . . . 17, 21, etc. Whenever the figure 01 is pre-printed under basic checks, any additional use of the gage in the same sequence would have to be entered under added checks in the 3rd field.

The plan refers to the percent inspection or the statistical quality control plan used. A table showing the form

Standard Coded Elements

The second detail card starts the standard coded elements. There are as many detail cards as necessary to

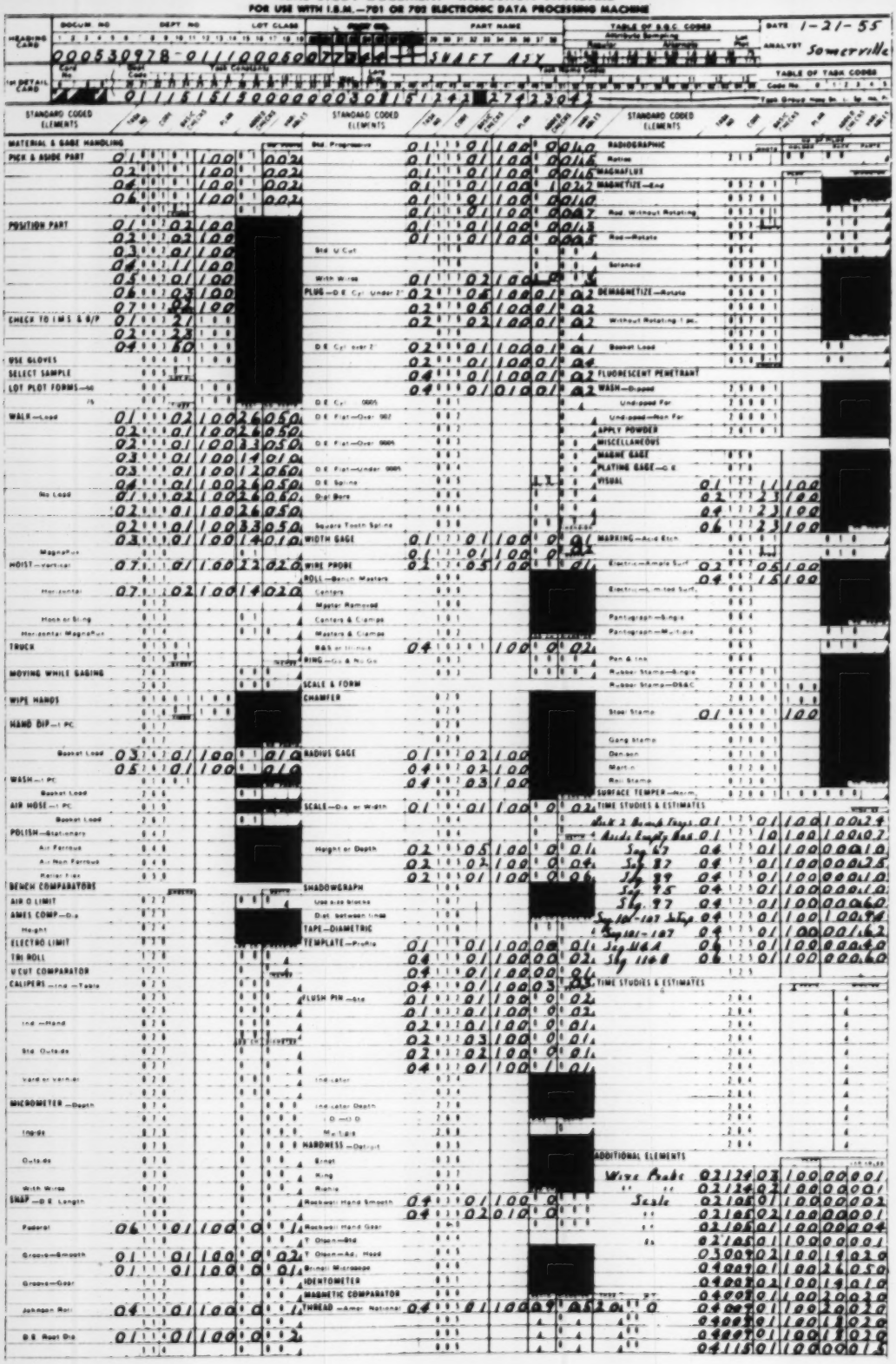


Fig. 6. Document containing original information to be machine processed

in which the statistical quality control plans are entered is shown on the upper right hand corner of the document above the task name codes. Where the plan is known to always be 100%, it is pre-printed on the document.

The third field contains the added checks and the variables pertaining to the element. When there are no added checks or variables, or where either weight or largest dimension is the only variable, all columns in this field are blocked out. It will be remembered that the weight and largest dimension had been read into the machine memory from the first detail card. The first two columns are for added checks which are entered as the number of added checks for each basic check. The total is computed in the computer by multiplying the basic checks by the additional checks. In the case of certain plug gages, the first two columns are used for depth as there are no added checks possible. The walking, hoisting, and trucking elements use these two columns for the number of feet traveled.

The 3rd, 4th, & 5th columns are for the entry of variables that affect the time, such as diameter, depth, inches, number of parts, etc. All decimal points are shown by a small pre-printed blocked out area in the lower right hand corner of a column. Whenever the variable changes from one element to another, a small heading is printed above the column affected.

When a task number is entered in the first field, the key puncher knows that element is used. She will then punch out all columns on that line, and continue down the sheet until all indicated elements are punched. The Time Study Analyst, however, in making the entries skips around the sheet in order to check off the required elements. The key puncher for example may punch the element, Pick and Aside Part, for task one and then repeat the element for task two if indicated. Regardless of the order in which the elements are punched, the computer will assign them to the proper task.

The analyst must make certain that all the columns are filled in for any element that is used. If a column that should contain a number is left blank, the key puncher will have to stop work on that document until the number is furnished by the analyst.

When there are not enough lines available for the repetition of a specific element, or when an element not listed on the document has to be entered, the blank section of the document under "Additional Elements" is used in exactly the same manner as the others except the analyst enters the code number of the element. When these spaces are used up a second sheet, which is printed without the Heading Card and 1st Detail Cards, is available.

Two code numbers appear on the document under Time Studies and Estimates. These two codes are for any gage or item not covered by standard data. Fields one and two for the first code are filled in the same as for other elements. The time in minutes is entered in the last four columns of the third field. A zero is entered in the 1st column if the time is per piece, and a one is entered if the time is to be pro-rated by the lot size. The computer adds the Time Study times as a constant in the manner directed. The second code differs from the first in that the time is always per piece, and the element entered is always done for 100% of the parts inspected.

The American National thread gage element is the only one on the document that uses four fields, and also the only one that uses depth as a decimal. The first two fields are filled in exactly as those for other elements. The third field has two variables. Columns 1 and 2 are for depth, the 3rd contains a pre-printed zero, the 4th and 5th are for diameter. The first two columns of the fourth field are for the number of threads per inch, while the 5th column is to designate whether or not over-travel is allowed. If over-travel occurs, a one is entered; if not, a zero entered. The 3rd and 4th columns contain pre-printed zeros.

The following two cases exemplify how the data processing method is used in comparison with the old method of handling elemental times.

Let us assume that it is required on task number four to truck 100% of the parts to be inspected 60 feet, carrying 20 parts per load. Let us further assume that on task number ten it is required to plug gage 32 holes 1.7 inches in diameter and 2 inches deep 10% of the time using a double ended cylinder plug gage.

By the old method the analyst when arriving at the element, Truck, on task number four, would refer to the table in the Standard Data Manual listing the time per foot to move a hand truck. He would then multiply this time by 60 and divide by twenty to determine the elemental time per part. Using the document, however he would, under the item Truck fill in only the blank columns. The document entry is as follows. The code 015 and the basic checks 01 is pre-printed.

	Task No.	Code	Basic Checks	Plan	Feet	Variable
Truck	04	015	01	100	60	020

Similarly using the old method for the element plug gage, after reference to the manual under cylinder plug gage and using a table with diameter and depth as variables, he would obtain a time that must be multiplied by 32 and factored by 10%. This is the time allowed per part and would be entered on the tabulation sheet for task ten together with the other elements for that task. The document entry is as follows. Code 079 being pre-printed.

	Task No.	Code	Basic Checks	Plan	Depth	Variable
Plug (Double ended)	10	079	32	010	02	017

Some of the automatic features of the program have been outlined previously. In order that the reader may grasp the extreme versatility of the electronic data processing method, a few further examples are cited.

Every element required for an X-ray task must be factored by one of three ratios. These ratios are the Shot Ratio; or the number of shots to be taken, divided by the number of pieces per film; the Film Ratio, or the number of shots to be taken × the number of films per holder, divided by the number of pieces per film; and the Rack Ratio, which is the number of shots to be taken × the number of films per holder, divided by the number of pieces per film × the number of films per rack. The machine program applies the proper ratio to all X-ray elements checked off by the analyst.

All setup time and time to check the settings of gages listed in the standard data are taken care of without any additional entry or thought by the analyst. These times have been assigned to the code number that identifies the gage and are programmed with other tables and constants in the computer.

The smallest entry that can be made for the weight of a part is 1 lb. Since this would cause an error when there are a large number of very small parts in a container that have to be multiplied by their individual weight, the computer compensates by never carrying this multiple to more than the time value for 50 lbs.

All plans that are designated by the analyst are used throughout the computations for all indicated lot sizes. However, in the case of a lot plot plan (a special form of statistical sampling) the actual sampling will not start until the lot size has reached 240 pieces which corresponds to the actual practice used in the factory. This does not have to be indicated by the analyst, but is taken care of by the original machine programming.

Certain constants for walking time and horizontal hoist time were previously mentioned in the explanation of the department code. These constants consist of the time necessary to carry parts with and without a hoist between various stations. These times vary by department, but, within a department, they vary only by the different methods used to inspect the part. The department code carried by the computer to these elements applies the correct constant. The time to attach and detach hoist for as many positions as are necessary is included in this constant.

Conclusion

Now that we are successfully using the data processing machine for computing time standards for our Inspection operations, the program is being expanded to embrace the time study work in connection with our machining operations, which constitute by far the bulk of our work. We have been using standard elemental data for a number of years and even though the system has been refined considerably to alleviate the work of the Time Study Analyst, experience has thus far shown that automatic processing will reduce the menial part of the job by two thirds thereby, in addition to greater productivity, allowing for more careful work analyses. For example, it will no longer be necessary to calculate machine time. The analyst would merely specify the dimensions and type of cut; and the electronic computer already fortified with knowledge of the material and the feeds and speeds available to the particular machine tool in question would assign the correct handling elements and automatically come up with the time necessary for any cut on any particular type of model of machine tool.

The authors believe that there is a definite advantage in the use of the data processing machine for calculating time standards, particularly when the machine is already available and where standard elemental time data is available, providing, of course, that there is sufficient volume to warrant its use. However, for those who have neither the machine nor elemental time data, it is entirely probable that in the foreseeable future a universal system of elemental time data will be programmed into such a machine to become available to members on a pool basis or as a service offered by consulting firms. Perhaps it is another step forward toward the often mentioned goal of establishing universal time standards.

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Management and the Industrial Engineers*

By Brooks McCormick

Director of Manufacturing, International Harvester Company

It is important in addressing a group of engineers that we have an early meeting of minds on just what—or whom—we are talking about when we refer to the "industrial engineer." So I think an integral part of my introductory remarks ought to be some brief description of the industrial engineer. I suspect it is more of a "generic" term having a broad, inclusive meaning, rather than a particular title or description within the profession. You all know that engineering has been referred to as an offspring of science; in fact, an applied science which is concerned with human needs. Engineers, either because of their personal inclinations or other circumstances farther beyond their control, may find themselves in one of many major branches of the profession; for example: sales, research, design, production and industrial. But even to say that a man is an industrial engineer is like saying that a man is a musician. A musician may be a singer, a pianist or, I suppose, even a zither player. Similarly, an industrial engineer may have responsibilities in several fields.

This delineation of the title and job description piqued my curiosity to the point where recently I looked into a catalogue of one of our major midwest engineering colleges. I wanted to see just how broad a field the industrial engineering course covered. The courses of study showed that the potential industrial engineer is concerned with these subjects: elements of motion and time study; quality control practice, plant maintenance engineering, materials handling, industrial packaging methods; production control; motion economy; advanced motion and time study; factory planning; quality control application; tool engineering economics; job evaluation and wage incentives; production management policy, and analysis and research.

All of these were, of course, over and beyond the usual undergraduate prerequisite course such as mathematics, the natural sciences and—that old "stand-by"—cost accounting.

I have taken the time to run through that list with you because I think it points up an important lesson: the responsibilities of, and the expectations from, the industrial engineer are practically unlimited. There is implied in such a course of study a much broader responsibility on the part of industrial engineers than perhaps many managements realize. We are getting away from the idea that they are specialists in the narrow sense of the word. At least we are in theory, if not in practice.

*Based on a presentation to the Fort Wayne Chapter of AIIE at their Second Annual Industrial Engineering Conference on April 26, 1956.

This recalls to mind a bit of sage advice from a very wise old biology professor who always used to introduce his lectures on the reproduction of the human species with this remark: "Gentlemen, we are about to begin the study of sex, a subject which could stand a great deal more theory and a great deal less practice!"

This university catalogue of study I mentioned would support the old professor's ideas as to the need for sound theory first, I think, because it has this very significant bit of prose as applied to industrial engineering:

> Upon an engineering background are built a series of Industrial Engineering courses that supply basic training in the major divisions of production management and also a sequence of courses in business and economics designed to familiarize the student with the *economic, financial and other business aspects of production management.* In the Industrial Engineering program as a whole, the course offerings and the requirements of the Department of Industrial Engineering and the Department of Business and Economics are carefully coordinated to insure a *course of study in production management that is well-rounded and that encompasses the entire field* of Industrial Engineering.

So it seems to me that the educators have some sound theories as to what the business world will be expecting from the industrial engineer. They are trying to educate him for positions of heavier responsibility not merely in the narrow, technical fields of engineering but in broader concepts of the management profession.

Management

I have some notions, however,—and perhaps I might even say some reservations—as to whether management actually is getting a performance from the industrial engineer which is as large in scope as that for which the educators are trying to fit him. What does management expect from the engineer? The answer to this question depends, of course, in a large measure on management itself, and the answer will vary from industry to industry, as well as from firm to firm. Because management is people, management therefore varies from actual mismanagement to enlightened, progressive management.

Technological progress, particularly since the end of World War II, in all industry has brought many engineers into management. When you in your profession study this question, it no longer becomes an "academic" interest. It is, in fact, a matter of self-searching analysis and evaluation.

I have seen instances where the engineer discusses in a detached manner the policies and decisions of management as if he were standing in the wings watching the show. His observations are sometimes very critical, if apparently detached. So long as the engineer has this attitude, so long as he believes he is not part of the "management show," the engineer cannot really feel that he is part of the management team. Management cannot expect a maximum contribution from him. This attitude on the part of the engineer is the result of either management's failure to clearly spell out the objectives, policies and plans of management to the engineer, or the engineer's inability or unwillingness to accept his responsibility as a member of the management organization.

Management Expects

Ideally, what should management expect of the industrial engineer? Certainly it has the right to expect the industrial engineer to provide ideas as to job simplification, improved plant layouts, equipment improvement and replacement, materials handling, establishing and administering wage and incentive payment systems, production control and quality control. Once having these ideas approved, he ought to be equipped to execute them in a workable program of administration.

But in addition to these specific requirements, I think management has a right to expect each engineer to do his part in the training of personnel in order to supplement the company's long-range program for selection and development of engineering personnel. More important, I believe the enlightened management has the right to expect the engineer—in any field in the profession—to take the necessary initiative so as to acquire knowledge in the fields of finance, manufacturing, sales and distribution, and industrial relations, especially as they influence the engineer's situation as a member of the management team.

So I have no doubts about the great contributions that the industrial engineer can make to management. All of us have seen the achievements of the engineer and his application of science to the material welfare of mankind. The average layman is quite conscious that the engineer's universally accepted technology is the constructive basis for modern industry, high living standards, and even our national security.

Engineer's Contribution

Too little has been said, though, of the great contribution which the engineer has made to modern management. Engineers have extended their attainments and mastery to all phases of management, often at the highest executive levels. It has been estimated that over a third of the management of large industry in America is in the hands of engineers. Almost a half of the mature engineering graduates now find their duties largely of a managerial nature. The crying need in all segments of American industry for more qualified engineers, both now and in future years, will increase these percentages. Indeed, it seems clear that management has recently become a profession into which the engineer has prefefred entree.

I am sure I need not buttress these observations with any detailed statistics, because they are commonly accepted, but I would refer you to such studies as The Engineers' Joint Council Report, University of Missouri's Professor Harry Rubey's paper before the Centennial of Engineering in 1952, and TIME magazine's Research Report No. 1069. All of these show conclusively that the engineer is making an outstanding contribution to management. Rensselaer Polytechnic Institute as long ago as 1949 questioned 591 executives of large companies and found that almost 40 percent of the executive and managerial positions in the industries were then held by graduates of colleges of engineering. It is reasonable to assume that this figure is substantially higher today. In 1951 the American Society for Engineering Education, as a result of a study it made, reported, "A careful study of the number of engineering graduates who hold executive positions in industry has shown that engineers have from 10 to 20 times the probability of attaining executive positions as compared with all other college graduates.

But if America is the "land of milk and honey" for ambitious and enterprising engineers, it is also true that this poses some special problems for management as well as for the engineers. Both must work together in the training of engineers for higher management positions.

To begin with, there is a need for greater understanding of engineering on the part of policy-making-level executives. There is a need for closer liaison between executive management and research. In my own Company—and I am sure it is equally true of yours—I see valuable contributions to be made by engineers to other management groups. Our Law and Patent departments need the advice of an engineer on patents or in negotiations; our industrial relations and accounting people need counsel on costs and time study; advertising and purchasing people need to talk with engineers, to learn their point of view as well as their language. Industrial engineers with sound work measurement and production standards experience are of immeasurable assistance to the labor relations staff people.

Engineers have a natural advantage in assisting other operating and staff departments in working toward higher management positions. Engineering training provides them with a background of fundamentals which makes it easier to master quickly the principles of machinery, the details of manufacturing processes and the product. They also learn to gather facts, arrange and analyze them logically, and to base their decisions and judgments on their conclusions.

Human Problems

Yet despite these advantages—or, perhaps, because of them—many engineers find it difficult to step into policy-making executive jobs. My personal opinion is that one reason for this stems from the fact that engineers find it difficult to measure the "intangibles" in business, and

therefore underestimate their importance. I realize that here I am perhaps walking where angels fear to tread, but I think we all ought to recognize that engineers sometimes fail to realize the importance of those things which cannot be measured—and industry is replete with problems arising out of "intangibles"—attitudes, emotions, preconceived ideas, management traditions. As a result, they find it hard to deal with those problems which cannot be solved by logic alone.

I believe most corporation executives would tell you that very often problems arise either in human relationships or in probing into unknown physical—or material—problems when an imaginative approach becomes more valuable than a "judicial" or "analytical" one. Guesses and formulas, calculated risks, based on intuition and judgment, sometimes must be taken when no charts, slide rules or formulas will help or when the lack of time will not permit any extensive analysis.

Addressing himself to this very problem, an executive of the American Brake Shoe Company, quoted in the Harvard Business Review last year, put it well, I think, when he said:

> There seems to be too little in the training of an engineer to make him realize that the world is full of people. Perhaps you would call this the aptitude for humanity. Pure technicians—the laboratory analyst, the aircraft stress engineer, the highly specialized surgeon—can forget the importance of this. But none of them can become a successful manager until he learns that people make up as much of the world as the elements. Certainly management in business must understand this. Human nature is fascinating, but it can be extremely tantalizing because it follows no known scientific law nor even a broad principle.

So there is clearly a need for good engineers to become good managers. This is not confined to the needs of individual companies, either. It has a *social* significance affecting our entire American economy. President Griswald of Yale University pointed out:

> It is said that the demand for engineers is so urgent that it would be impractical to prolong their apprenticeship with the liberal arts. Yet the most urgent part of this urgent demand is for engineers who can cope with human problems. Only these can save our technology from becoming a headless, heartless and eventually helpless monster.

Inner Development

What I have been saying thus far might be summarized this way: Engineers, as a group, are accustomed to being guided in their decisions by facts, and rules based on facts. They are predisposed by training to reach out for experimental evidence which is reproducible. They have a healthy and inherent respect for the "absolute truth," as contrasted with opinion, "hunch", or even imaginative thinking. They often rely too much on factual knowledge, without assessing the importance of the intangible.

So, first, we have engineers in management in growing numbers. Secondly, we must continue to have them there—in much larger numbers—if we are to maintain and increase our rate of industrial and economic progress. Thirdly, engineers are, by reason of their training and background, especially qualified to be managers. Fourth, in order to realize their full potential on the management team, engineers and their superiors ought to be looking to the job of inner development by increasing their job responsibilities, by widening their concepts of management philosophies and practices.

Let's see if we can make an appraisal of the status of the engineer's job in management by probing into the ways in which engineers can help themselves and, secondly, the ways in which policy-making executives at the top can assist them in this "inner development."

This is a tall order in the limited amount of time allotted to me, but I have some notions on this question. You may not agree with all of them, but, on the theory that self-examination is good for the soul, it should not be time wasted.

I think self-improvement begins when we recognize our own limitations and strive to overcome them. I have already indicated what I believe are some of the engineer's occupational limitations—the natural tendency to shy away from the intangibles, the reluctance to cope with problems that cannot be measured with the slide rule. This is a reluctance born of engineering training, perhaps, and, therefore, understandable.

Many engineers in management spend too much time analyzing and exploring. They search too long for several proofs to bolster their decision. This is commendable, perhaps, in comparison with the salesman type who judges too quickly, or not at all, on a hunch and rushes into a decision without a full set of facts. But when an engineer must go through a laborious decision-making process of cause and effect, the decision sometimes comes too late—the problem by that time is incapable of cure. So I think that sometimes engineers are so enmeshed in the pros-and-cons of gathering irrefutable evidence, that their timing is bad. The ability to make prompt decisions (in contrast to "snap judgments") is more and more a prime requisite of any business manager. And I believe there is a compromise between the extremes I have cited here.

Another weakness or "difficulty" some engineers have is that they are "one-man operators." They build fences around themselves at the drawing board or in the research laboratory, with the result that other staff people who could make a real contribution to the problem do not have an opportunity to help. This is fatal in any operating job, in my opinion. "Picking the brains" of all the best minds available is still the quickest and most effective way to lick a problem, generally speaking. While the engineer is usually trained to go at a problem from many angles, too often this is done "on his own" without seeking the advice and counsel of other management men who could bring a fresh viewpoint—and perhaps a better and quicker solution—to the problem.

I have heard corporation officials say that engineers tend to get so involved in engineering that they "do not see the forest for the trees"—their vision becomes too

limited and, thus, they even waste the other latent managerial talents they may have. This happens when they get wrapped up in technical details and neglect the other facets of the problem—particularly the human problems.

These are but a few of the common pitfalls which I believe retard the engineer in working towards larger, more responsible, executive positions in industry. I hope you will not view my comments as any indictment of the engineering profession, for surely they are minor in relation to the over-all skills and knowledge which engineers have contributed to the technological progress of our country.

Forward Planning

But if these problems I have cited are valid, management is even more to be criticized for its failure to help the engineer come to grips with them.

I realize there is some danger in generalizing on this problem, simply because the peculiar circumstances of management, organizations, structure, development and reward vary so much from one company to another.

I believe one of management's weaknesses is simply its failure to assign as much responsibility to the industrial engineer as he is suited for. The end result is that the engineer does not have enough to challenge him. I believe that management can make wider use of the engineer in the future in the whole problem of finding more and better ways to reduce manufacturing costs, to find methods to help offset the upward wage movement. This is a "must" in view of the fact that production is so close to present demands and, in many cases, already exceeding them.

In my own Company, I foresee a much wider use of the industrial engineer in long-term planning. This is a necessary part of good business management. Certainly the industrial engineer will be a part of any committee in this work. In Harvester, we have called upon industrial engineers to give us not merely help but real leadership in our over-all long-range planning methods. In 1946 we established a Manufacturing Research Laboratory, which provides data and recommendations to the manufacturing engineering groups in our plants regarding trends and progress in manufacturing methods and techniques.

I am sure you are aware that one of the burning questions confronting business today is the matter of application of principles of work measurement to the indirect employees in both offices and shops. If we are to have conservation of needed manpower and essential cost reductions, management will depend on the industrial engineers to give direction and leadership.

The whole problem of "automation," to use a little-understood and often over-rated term, is one which the industrial engineers will be expected to help us solve.

So I don't think management has to worry about any "make-work" program for its industrial engineers. It will aid in their development if it gives them the responsibility—and commensurate authority—to solve some of these thorny management problems.

Another way in which I believe that management can aid in the higher development of engineers is to assign them responsibilities out of their specialized field, gradually, and with coaching and direction from senior officials. Industrial engineering is an ideal training ground for manufacturing supervisory and staff positions. This means a wider exposure to the problems of management. It calls for management to make the opportunity for the engineer to know of—and to work at—jobs other than his engineering work.

Many good men, potential executives, have been hired into engineering jobs on a very impersonal basis (particularly in larger companies) by personnel departments to fill particular jobs at a drafting board or in a research laboratory. It is a tragic indictment of management that so many of these men have become "buried" because management failed to take the time and effort to know and evaluate these people, to develop them for larger, more responsible positions.

Certainly in no manner of a boast—(and other companies have been doing so for some time)—I am glad to be able to report to you that my own Company is now embarking on a very extensive, long-range, organized program for the training and development of professional, technical, and skilled employees in our Company, to be carried on in every operating division. While some of the details are yet to be worked out, I can tell you that it is one of the most important undertakings in the field of personnel development my Company has ever launched. I would be disappointed if many industrial engineers did not eventually find themselves in higher management positions as a result of this development program.

But even this type of organized program has its limitations on management, because it is bound to be "mass-organized" and therefore stereotyped to a degree unless it combines, as we propose to do in our own plan, the personal guidance and direction which senior officials should give to the engineer if full development is to be realized. I think top management people often miss opportunities to help the engineer on the job, to give him personal counseling out in the field or in the laboratory. Either out of natural reticence or for other reasons, senior officials fail to give frank criticisms and constructive suggestions for improved performance to the engineer, to point out greater opportunities for accomplishment, or even to "prod" the engineer into doing a better job. These things, directed along personalized, individual-coaching lines, are a "must" if the engineer is to be made to feel any important sense of belonging, to acquire an attitude of real accomplishment.

These things I have suggested are "individual" or personal in nature. From a policy standpoint, there are certain fundamental things which any far-sighted management can—and must—do to bring about the development of the engineer for top management positions. I am referring here, for example, to such basic matters as a sound employment and promotion policy, close attention

to salary review, giving adequate remuneration and other rewards, as well as to status and authority.

If a company has sound personnel policies on these matters and executes them fairly and equitably, it can confidently expect engineers to make the kind of a large contribution to the management which it has a right to hope for.

The engineer is in management today, certainly—in ever-increasing numbers. But each engineer must ask himself if he is measuring up to what is expected of him as a member of the management organization. Similarly, each top executive must ask himself if he is doing everything he can to strengthen his organization by fully utilizing the available engineering talent, by consciously broadening his engineers so as to make them capable of assuming real management responsibilities.

I said earlier that "management is people"; it is a dynamic force created by a group of human beings. Many of them are engineers, but *all* of them are united in a common effort to plan and direct the utilization of men, materials and machines toward a single, desired goal with the greatest possible efficiency. I confidently expect that the industrial engineering profession will continue to make an even greater contribution to that common effort.

If management and the industrial engineer, by their joint efforts, can solve the problems I have mentioned, we will be much closer to the realization of this important common goal.

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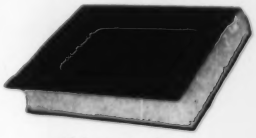

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Automation: Its Impact on Industrial Engineering

Dr. William B. Wolf

Associate Professor of Business Administration, University of Washington

A great deal of excitement has been building up over "Automation." Professional societies have discussed it in their meetings; current periodicals feature stories about it; and recently a congressional committee spent a significant amount of the taxpayers' money conducting hearings on automation and technological change (1).

Just what is automation and what are its implications to industrial engineering? It is the purpose of this paper to explore the answers to these questions. To do so we need to define clearly what we are talking about. Accordingly the following topics will be discussed: (a) the nature of automation; (b) the general nature of industrial engineering, and (c) the impact of automation on industrial engineering.

The Nature of Automation

Automation is a new word. At the time of this writing it doesn't appear in the dictionary. But shortly, it will. It has already become well entrenched in the language of business. A wide variety of professional literature is growing up around the word (2). Yet there is no generally accepted "connotation" of "automation."

John Diebold, author of the book *Automation*, and former editor of the magazine *Automatic Control* describes "automation" as "a basic change in production philosophy. (2)." This new philosophy according to Diebold, involves viewing industrial processes as complete, integrated systems, from the introduction of the raw material until the completion of the final product (1, pp. 7–9). The "new philosophy" is to be contrasted with the present emphasis on specialization and division of labor.

Diebold sees automation as being composed of the concept of "a welding together of the production steps and a body of complex technology such as self-regulating mechanisms." He points out: "It is not so much the technology itself, but rather the way it is applied that is properly called automation."

Robert C. Tait, President of Stromberg-Carlson Company and Senior Vice President of General Dynamics Corporation, defines "automation" as "a phrase coined by Del Harder of Ford Motor Company to describe their recent super-mechanization (1, p. 197)."

He goes on to say that some experts in the field of automation limit the term to control devices that involve what is known as feed back—that is, a system of machines and controls that is capable of adjusting its own operation in the direction needed to obtain a desired result rather than simply following a preset cycle of operations. . . . The feed back principle in itself is nothing new, but the modern application is new in that the feed back information is handled by electronic means (1, pp. 197–198)."

Thus the term automation may connote anything from super-mechanization to a new philosophy of production. Rather than attempt to resolve the differences in definition, it appears that the best way to contribute to an understanding of the impact of automation upon industrial engineering is to deal only with its most fundamental aspect . . . the digital computer.

The digital computer is the unique and the startling device in most all descriptions of automation. Frequently it is referred to as the "electronic brain" or the "giant brain."[1] Its memory capacity and its speed in working logical calculation has stirred the imagination of the public. In fact, widespread publicity has given many the idea that man will soon be slave to thinking machines (3).

Although there are many digital computers on the market, no two of them are exactly alike.[2] Their potential

[1] For example, Monsanto Chemical Company refers to its Model 702 Electronic Data Processing Machine as "the giant brain".

[2] Two types of computers are associated with automation—the analogue computer and the digital computer. The analogue computer is more generally used in controlling operations and solving simple problems. It is just what the term implies—a physical analogy of the type of problem its designer wishes it to solve. When the machine is supplied information in the form of a physical quantity, it transforms it into another physical quantity in accordance with the rules of its construction. The resulting physical quantity is the answer desired. A slide rule is an example of a machine of the analogue type.

As contrasted to the digital computer, the following comparisons are important:

1. The analogue computer is subject to the hazards of "play" and "noise". Hence, it does not give as precise answers as the digital computer.

2. There is no intrinsic limit to the complexity of the problem or process that a digital machine can handle or control. "Play" and "noise" limit analogue computers.

3. An analogue machine has no time lag in solving a problem. It continuously offers a solution to the problem it is solving, and this solution is appropriate at every instant to all the input information which at that time has entered the machine. At present, digital machines are slower. This limits their applicability in performing certain control functions such as: controlling an autopilot flying a plane which must respond at once to an altitude change resulting from a gust of wind.

can be roughly indicated by describing the capabilities of the IBM Model 702 Electronic Data Processing Machine installed at Monsanto Chemical Company's St. Louis headquarters. It is reported that this machine will provide its operator with the computing ability of 25,000 trained mathematicians. Each of its reels of magnetic tape can remember enough information to fill a Manhattan telephone book; it can work information at the rate of 7,200 logical operations per second; it can multiply a pair of 127 digit numbers and arrive at a 254 digit answer in one-third of a second. In a second it can add 4,000 five-digit figures. In 12 machine hours it will do 1,200 cost reports that normally take 1,800 man-hours; in approximately two hours it will complete a financial statement that takes a staff of accountants 320 hours. It should be added that in several respects this model has already become obsolete.

Business Applications of Digital Computers

For purpose of discussion the uses of digital computers in business may be classified as: (a) control of manufacturing machines; (b) problem solving, and (c) processing data.[3]

1. *Digital computers as devices for controlling manufacturing machinery:*

Probably the most publicized use of digital computers to control machinery is the automatic machine tool constructed at the Massachusetts Institute of Technology (4). The M.I.T. system combines digital and analogue processes under feed back control to govern a milling machine whose cutting tool moves in three planes relative to the work piece. The basic concept here is in a sense similar to the old-fashioned player piano. The machine tool is hooked up to an electronic system. Information is fed to the system by means of a magnetic tape. The machine is directed what to do. Information is fed back to the electronic control, which automatically gives immediate instructions for correction of any variance.

Numerous similar applications of computers exist. For example, Sundstrand Machine Tool Company produces an automatic lathe which "gauges each part as it is produced and automatically resets the cutting tools to compensate for tool wear. In addition, when the cutting tools have been worn down to a certain predetermined limit, the machine automatically replaces them with sharp tools. The parts are automatically loaded onto the machine and are unloaded as they are finished. These lathes can be operated for 5 to 8 hours without attention, except for an occasional check to make sure that parts are being delivered to the loading mechanism (5)."

The general principles underlying these uses of digital computers are similar. Someone or something determines what performance is desired. This information is transmitted to the machine performing the action. Some device measures the actual performance. The information thus obtained is compared with the desired performance. If the actual performance doesn't meet the requirements desired, then corrective signals are transmitted to the machine. The machine is adjusted so that the end product meets required specifications. The role of the digital computer in this process is to weigh actual performance against required performance, thus it determines the corrective adjustments that are necessary and it activates the mechanisms for insuring that the corrective adjustments are made.

This use of the digital computer allows for the integration of machines with each other so that a fully automatic self-regulating system is possible.

2. *Digital computers as devices for solving business problems:*

The digital computer is built on the principles of logic. It can perform mathematical or logical operations at tremendous speeds. Thus, it is able to solve complex problems in short periods of time. An example will serve to illustrate this:

> The Rayco Manufacturing Company has used the digital computer to determine the locations of new stores. To do this Rayco quantified as many variables as it could. All of these were variables that might have some effect on the sale of its products—e.g., population, income per family, car registrations, etc. A total of 300 variables were used. Sales data for 1954 and data on the 300 variables were collected in 51 sample cities. By drawing simple correlation charts Rayco was able to eliminate all but 74 variables. The 74 that appeared to be statistically significant were taken to the IBM computing center for further study. These 74 variables had to be analyzed to see which were significant influences on sales on a net basis—after considering the effect of all the others taken at the same time. The calculation involved 888 relations. It would have been virtually impossible to do it by hand.
>
> With the digital computer the 74 factors were reduced to 37. These 37 had a strong positive or negative relationship to sales. By putting these 37 factors together simultaneously in an equation, Rayco had a correlation to sales per square mile of .98—almost a perfect correlation (6).

The problems which digital computers handle may be classified as (a) linear, and (b) simulation. Linear equations are those which expressed graphically are represented by a straight line. Thus, if two unknowns are present, equal changes in one direction always result in proportionate changes in the other direction—linear equations assume proportionality.

One type of linear problem is that in which there is a unique solution and an equal number of unknowns. A cost allocation problem in which it is assumed that the total charges to any department shall be the sum of the direct charges to that department, plus a specified fraction of the total charges of each of the other departments would be such a problem. A second type of linear problem is that in which it may not be possible to find values for the unknowns that will satisfy all of the equations. Here the solution consists of the answer which as nearly as possible satisfies all of the given equations. An example of this is

[3] It should be pointed out that these classifications are not totally independent of one another. They are, however, sufficiently distinct to be an aid to the organization of this discussion.

seen in solving for the wage structure under a point system of job evaluation. A third type of linear problem is seen in linear programming. Here the number of linear equations and the number of unknowns are not the same; thus the linear equations will give an infinite number of solutions. The management selects the solution which maximizes some function of the variables—i.e., unit cost.

The second type of problem for which digital computers are useful are those involving simulation. Simulation may be compared with setting up a pilot plant before going into production. In using the digital computer in simulation, the simulated system is described as a mathematical abstraction. The pilot plant becomes a set of equations. Thus, we may think of simulation as describing a plant process by a set of equations and then evaluating or solving the equations under a variety of conditions.

An example of simulation is seen in problems related to propulsion —where the problem is a nonlinear formulation (7). In such problems speed is not constant, the rate of change in speed may continually vary. It is a problem in differential calculus involving derivatives of a high order. Thus, the flight characteristics of an airplane can be described in terms of differential equations into which enter such "parameters" as weight of the airplane, amount of fuel, size of the power plant, etc. Such sets of equations for flight characteristics have no unique solution; neither is it known how to supply an additional condition which leads one directly to an optimum solution. Hence, it has been found both practical and economical to calculate the solution to these differential equations for a large number of choices of the parameters, to supply the resulting solutions to the designing engineers in order that they may choose the appropriate combinations of parameters (8).

3. *Data processing systems:*

One of the most recent and dramatic applications of the digital computer is in accounting and other data processing tasks required in business (9). Much of the present day talk of automation deals with this subject.

The advantages of digital computers in the area of data processing arise from their ability to follow through a long series of sequential operations without human intervention. Secondly, the computer performs at incredibly high speed. Finally, using the computer it is possible to routinize practically all exceptions to a procedure.

Probably the best way to illustrate this type of use of the computer is to describe some actual installations.

In April of 1955 the Wall Street Journal carried a story which indicated some of the uses of digital computers for processing data. The article described how the Super Valu Stores, Inc. of Minneapolis planned to use two medium-sized electronic "brains." They planned to use the equipment to:

Turn out a daily inventory report in 30 minutes—a job that previously took one person forty hours.

Take a complete bookkeeping inventory in 30 minutes—compared with 240 man-hours under the old system.

Notify buyers automatically when warehouse stocks of any product have run out

Type out a purchase order automatically when stocks of any item reach a minimum reordering level.

Tell warehouse personnel exactly where they can find any product and how much of it is there.

Carry out billing, sales analysis and general accounting functions (1, p. 116).

The National Cash Register Company has on the market a computer system for department stores that ties every cash register, accounting and adding machine in a store to an electronic computer by means of a direct ticker-tape wire. With this electronic sales accounting system all pertinent information regarding a sale, e.g., the item sold, price, name of the salesperson, customer, etc., is directly transmitted to the computer. In addition, up-to-the-minute inventory accounts are kept by tape attachments on adding and accounting machines. Furthermore, the computer can process this data to give a variety of statistical reports (10).

A survey of the literature indicates that computers can and do handle practically every type of clerical function performed in large businesses. They process payrolls, bill customers, schedule production, control inventories, distribute costs, handle accounts payable, etc.

Summary:

The purpose of this paper is to indicate the impact of automation on industrial engineering. To do so it has been helpful to limit our definition of automation to the use of digital computers in business. A review of the use of digital computers indicates that three related but separate applications exist:

1. The use of digital computers to control machines and processes of manufacturing. In this area we are dealing with problems of machine design.

2. The use of computers to solve mathematical formulations of business problems.

3. The use of the computer to deal with data processing. Here we are dealing with accounting, production control and other aspects of the paper work involved in managing.

The General Nature of Industrial Engineering

Precisely what are the implications of the use of the digital computer to industrial engineering? To answer this, we first have to clarify what we mean by "industrial engineering." As used here the term refers to those areas of management involving methods work, time study, job evaluation, wage incentives, inventory control, plant layout, quality control, cost estimating and production control.[4]

The Implications of the Use of Digital Computers to Industrial Engineering

Digital computers will have rather far reaching effects on industrial engineering. The exact nature of these will vary from situation to situation. Despite the dangers of

[4] It is difficult to limit the list of areas covered by industrial engineering. An attempt to itemize all of the activities engaged in by industrial engineers leads to the conclusions that industrial engineers cover anything and everything related to the management of the producing unit. However, the principal areas are those listed above.

generalizing widely, certain tendencies are perceptible. The following observations have been stated to indicate the trends. No more is claimed for them other than that they indicate the logical conclusions of existing tendencies. Their materialization will take considerable time and will be a function of a wide variety of forces—e.g., the cost of computers, the nature of the manufacturing firm, the availability of trained personnel; resistance to change, etc.

1. *Time study will cease to be of major importance to industrial engineers.*

Automatic controls utilizing digital and analogue computers will eliminate many of the problems of measuring rates of output. Production speeds will be built into the machines. The role of the operator will be minor.

Since the rate of output will be determined by the machine, the knotty problems of leveling and determining fatigue allowances will be avoided.

2. *Wage incentive plans based on individual output will become outmoded.*

Systems of payments by results which directly tie the individual's pay to his output will not make sense in the automated plant. In such a plant every operation is interrelated. There is little or nothing to be gained by encouraging the individual worker to increase his output. Furthermore, the nature of the technology will limit the opportunity for any one individual to increase output. This means that many of the problems of conventional wage incentives will be avoided (11).

It should not be assumed that wage incentives are obsolete. It is evident, however, that their nature will change. In all probability there will be increased use of group incentive plans covering entire plants. Where such plans are developed the incentive reward will be calculated on the basis of the elimination of downtime.

3. *Existing job evaluation plans will require considerable revision.*

To function effectively job evaluation plans must provide a realistic wage structure. The increasing use of digital computers will tend to result in a shortage of personnel with certain skills. The net impact of this will be a tendency for the wages on certain technical jobs to be bid up relative to those on other jobs. The problem will be further complicated by the fact that the weight given to the various factors under most point systems of job evaluation will not reflect the value of all of the new jobs. For example, in the automated factory it is possible that a worker's job will consist of nothing more than watching a series of gauges—e.g., working conditions will be excellent, hazards will be at a minimum, the physical and mental effort required will be slight, training requirement nebulous, etc. Yet, if an emergency arises and the worker fails to press the correct button chaos may follow. Conceivably the problem of paying such a worker a "realistic wage" may be partially solved by giving increased weight to the factor of "responsibility." In addition, it may be desirable to include in job evaluation plans new factors such as boredom or monotony.

4. *The emphasis in method studies will change.*

Methods study in the automated plant will not be concerned with cutting labor costs. This arises from the fact that labor costs will be a small percentage of operating costs. Furthermore, it is likely that much of the labor that is employed will be hired on a stand-by basis. Their job will be to handle crises. The emphasis in methods work will be on machine utilization.

In the conversion to electronic data processing a new variation in methods work will predominate. It will involve the study of the operating organization as an integrated whole; tracing the origination of information and its flow to points of final action; determining time requirements for the processing of transaction and selecting machines and methods to meet the needs of the company as a whole. This type of methods work has been referred to as "systems engineering (9, Canning, pp. 136-137)." To perform this work the industrial engineer must have a thorough grasp of the company's operations plus a wide knowledge of the capacity of available digital computers.

5. *The conversion to electronic data processing will stimulate methods improvements.*

The analysis of the "systems engineer" will, in all probability, reveal the possibility of significant savings through methods changes. However, an equally important impact of the conversion will be the fact that the organization may be psychologically prepared to accept certain changes which were previously resisted. For example, one insurance company found that it took the advent of a digital computer to get the various branch managers to accept unified accounting procedures. Similarly numerous changes which were previously prevented due to conflicts between personalities may become acceptable.

6. *Industrial engineers will have to develop new skills in the use of mathematical models.*

The use of the digital computer provides a mechanism by which more intricate problems of management may be solved mathematically. Certain types of complex decisions can be made by digital computers in a more efficient manner than they can be made without such equipment.

For example, with the digital computer we can do a better job in figuring economic lot sizes. No longer will the complexity of the calculations require that the economic lot for each item be considered separately; instead we can recognize that the economical lot of one specific item is intimately related to the economic lot of every other item. All items should be (and with the computer they can be), considered simultaneously (9, Canning, pp. 230-233). In short, the advent of the digital computer will mean that more and more mathematical models will be used in decision making. The industrial engineer will need to develop new skills in mathematics.

Conclusion:

The digital computer has far reaching implications to industrial engineering. Many of the existing techniques will need modification; the industrial engineer's point of view will need to be focused on the plant as an integrated system of mutual related parts; and, most important, the industrial engineer will have to gain a thorough understanding of digital computers and the mathematics which such equipment can handle.

Probably the most formidable job facing industrial engineers will be that of understanding and using the mathematical models that the computer can handle. It will be hard work. Some will be appalled or confused by the new techniques. Some may argue against undertaking the job to be done; they will criticize the inaccuracies in the mathematical approach to production problems and point out that the necessary quantitative data is frequently unavailable or that the mathematical solution is seldom 100% accurate. While it is true that these, and other limitations arise, they should not be the basis for deciding against the mathematical approach. The real test of this approach is *not* whether or not it yields perfect answers. The test is whether or not it yields answers that are better than those provided by other methods. When this test is used, the case for applied mathematics in business are the weaknesses of rule-of-thumb and intuitive methods.

In short applied mathematics is not necessarily a good technique for business. However, in many situations it is the best available.

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(1) *Automation and Technological Change: Hearings Before the Subcommittee on Economic Stabilization of the Joint Committee on the Economic Report; Congress of the United States; Eighty Fourth Congress,* (United States Government Printing Office, Washington, D. C., 1955), 644 pages.

(2) See for example: John Diebold, *Automation, The Advent of the Automatic Factory,* D. Van Nostrand Company, New York, 1952. Additional evidence of the general acceptance of the term is seen in the fact that the Industrial Arts Index recently set up "automation" as a topic heading, and that several business periodicals are using the word in their titles, e.g., *Automation,* Penton Publishing Company, Cleveland, Ohio; *Instruments and Automation,* Instruments Publishing Company, Pittsburgh, Pennsylvania.

(3) Evidence of this fear was brought out by a recent radio poll conducted in Detroit. It showed that next to Russia the things the listeners feared most was "automation". *Business Week,* October 1, 1955, page 76.

Comics and science fiction have done much to stimulate the public's imagination on the use of electronic brains. See for example: Groff Conklin, ed. *Thinking Machines,* Bantam Books, New York, 1954.

(4) For a simple, non-technical description of the M.I.T. automatic machine tool see: William Pease, "An Automatic Machine Tool" in *Automatic Control* by the editors of *Scientific America,* Simon and Schuster, New York, 1955.

(5) *American Machinist,* March 14, 1955, p. 117.

(6) *Business Week,* May 14, 1955.

(7) For an interesting description of Simulation see M. L. Deutsch and J. S. Hicks, "Simulation of a Refinery by a Digital Computer", *World Petroleum Annual Refinery Review,* 1955.

(8) This discussion of the use of digital computers in problem solving is in part based on an article in *Management Science,* "Computing in Management Science" by Cuthbert C. Hurd, Vol. I, No. 2, January 1955, pp. 103-114.

(9) During March 1956 two excellent books on electronic data processing were published: Richard G. Canning, *Electronic Data Processing for Business and Industry,* John Wiley and Sons, Inc., New York, 1956.

George Kozmetzky and Paul Kircher, *Electronic Computers and Management Control,* McGraw-Hill Book Company, New York, 1956.

(10) *Business Week,* February 5, 1955.

(11) For an analysis of the problems associated with conventional wage incentive plans see William B. Wolf, *Wage Incentives: Their Use as a Managerial Tool,* Columbia University Press, New York, 1956.

Institute Interests

(continued from page 34)

UNIVERSITY OF CALIFORNIA, LOS ANGELES

The Ninth Annual College-Industry Conference sponsored each year by the Relations with Industry Division of the American Society for Engineering Education, will be held on January 30 and 31, 1957, at the University of California, Los Angeles, under auspices of University Extension and the U. C. L. A. College of Engineering.

The Relations with Industry Committee of the Pacific Southwest Section of the Society is planning the conference program to provide interest to people from industry and education alike.

The conference, held on the West Coast for the first time, will have as its theme, "Improvement of the Engineer - A Dual Responsibility of Industry and the Engineering School". Emphasis throughout will be on improvement of the engineer rather than on the training of more engineers, according to J. M. English, conference chairman.

INTERNATIONAL CONFERENCE ON OPERATIONAL RESEARCH

An International Conference on Operational Research is being organized by the Operations Research Society of America, the Institute of Management Sciences U. S. A., and the Operational Research Society of Great Britain. This conference will be held at Oxford, England, from September 2 to September 6, 1957. The objects of the conference will be to unify and extend the science of Operational Research, and papers will be presented in four sessions . . .

1. The "Wholeness" or Underlying Unity of Operational Research.
2. The Methodology.
3. Applications.

and

4. (To be announced.)

Further information regarding this conference will be circulated later this year. In the meantime, proposed papers are invited and summaries totalling not more than 200 words should be sent to . . .

Dr. Thornton Page
7100 Connecticut Ave.
Chevy Chase, Md.

INSTITUTE INTERESTS

ALBUQUERQUE CHAPTER

A joint meeting of the Albuquerque chapter of the American Institute of Industrial Engineers and the American Ordinance Association was held on October 18, 1956. The speaker was Martin E. Rosenfeldt, Plant Manager, Carrier Division, of the Elizondo Company, Monterrey, Mexico.

Mr. Rosenfeldt told of his experiences in starting a manufacturing plant at Monterrey. Naturally, there were many problems and one of these was the hiring and training of personnel. Trained personnel were non-existent, in fact, untrained workers were difficult to find. Hiring involved the recruiting of people off the street and approaching those gathered at the railroad station or any other likely place. Once hired, these people required much training. An intensive training program was started which involved explaining the various operations over and over again in great detail. Many of the first units to be produced were rejected due to poor workmanship, but then the skill of the workers began to improve with the result that good quality Air Conditioners began to roll off the production line.

Considerable difficulty was experienced in finding capable production supervisors and foremen. It was necessary to change some of these many times before a suitable combination was found. Progress has been constant. Once a production line was established for the smaller air conditioners, production lines were started for the larger air conditioners. Testing and inspection procedures are constantly being developed and improved. Recently, the workers were given some "fringe" benefits, such as health or medical service, etc. This is a pioneer step as other enterprises in Monterrey have not adopted this policy.

Mr. Rosenfeldt spoke with pride concerning his plant building which is a radical departure from other construction in the Monterrey area. This building is somewhat of a showplace and features air conditioning (of course), better lighting, modern plumbing, dining room for the employees, coke machines, etc.

ATLANTA CHAPTER

Professor Emerson, President of AIIE and head of the Industrial Engineering School, at the University of Tennessee, spoke to the Atlanta Chapter at their dinner meeting on October 9. His theme was the changing concept of Industrial Engineering that Operations Research is fostering and the need for AIIE leadership. The highlight of the meeting was the honoring of Col. F. F. Groseclose. Col. Groseclose, past president of AIIE, was made a Fellow in AIIE at the National Convention, in Washington, D. C., last May, and Professor Emerson presented him the certificate of the award at the meeting.

October was a busy month with the November meeting coming on October 30. For the November meeting a group of about eighty members and guests met at Lockheed Aircraft Corp., in Marietta, Georgia, for a tour of their Electronic Data Processing Machines. After dinner in the plant cafeteria, the group visited the computer centers. They later assembled in the plant movie auditorium for a talk by Mr. Charity Hogang. He explained how Lockheed was using the computer today and what plans were in store in the foreseeable future.

CHARLESTON-HUNTINGTON CHAPTER

Ten members of the Charleston Huntington Chapter were conducted on a tour of an Island Creek Coal Company bituminous coal mine near Holden, West Virgina, on September 27, with Mr. Charles W. Rountree, Director of Industrial Engineering at Island Creek, and members of his staff as guides. During the three hour tour of the mine, modern coal mining equipment and methods were observed and industrial engineering activites in the mine were discussed.

During the regular monthly meeting on October 8, thirty-five (35) members of the chapter toured the American Viscose Corporation staple rayon plant at Nitro, West Virginia. Mr. Charles G. Howard, Chief Plant Industrial Engineer at the rayon plant and President of the Charleston-Huntington Chapter, directed the tour. Applications of industrial engineering techniques throughout the plant were explained. The local chapter plans similar tours through other industries in the Charleston-Huntington area during the year.

Currently being printed for the local chapter is a 4" x 6" booklet which will contain a page for each member, on which will appear his picture and information pertaining to his job, employer and education. The purpose of the booklet is to permit the members to become better acquainted with each other.

CINCINNATI CHAPTER

The first 1956-1957 meeting of the Cincinnati Chapter was held September 19, 1956 at the headquarters of the Engineering Society of Cincinnati. A delicious steak dinner was enjoyed by 44 members and guests after which everyone adjourned to the auditorium to be enlightened by our guest speaker, Mr. Fred Gropper of the Dupont Company.

The topic of this meeting was "Multiple Factor Incentive Plan" and Mr. Gropper proved to be an expert in its techniques and applications in the field of incentive.

Mr. Gropper presented an actual breakdown by percentages of a job in his plant. He also demonstrated how each job was divided to induce the operators and supervisors to help in reducing production costs.

Quite a discussion followed as most everyone had some questions to ask and as the meeting adjourned it was considered to be beneficial to all who attended.

CLEVELAND CHAPTER

The November meeting of the Cleveland Chapter was held at The Cleveland Hotel, November 1, 1956.

Ralph O. Swalm, Professor of Industrial Engineering, Syracuse University, New York, was the speaker. His subject was "Machine Replacement".

PROGRAM 1956-1957

February 7, 1957 "Husband and Wife, an Executive Team"	Roger Clouse—Vice President, Federal Reserve Bank
March 7, 1957 "High Velocity Turning"	David N. Smith—Manager of Research, Jones & Lamson Mach. Co., Springfield, Vt.
April 4, 1957 "To Simplify or Not to Simplify"	Don F. Copell—Vice President, Wagner Baking Corp., Newark, N. J.
May 2, 1957 Annual Business Meeting	W. M. Rudolph, Jr.—Program Chairman, Eaton Manufacturing Co.

DAYTON CHAPTER

The October meeting of the Dayton Chapter was held October 9, 1956. Prof. Bartlett, Industrial Engineering Department, Purdue University, spoke on "Symbolic Logic and Industrial Engineering".

Dr. David Debeau, Division Consultant, Management Research Division, Battelle Memorial Inst., Columbus, Ohio, was speaker for the November meeting. His subject was "A Realistic View of Mathematical Techniques".

At the Chapter meeting on December 11, Mr. Jack Moss, Moss KeyRec Systems, Dayton, Ohio, spoke on "Creative Thinking for Solving Problems in Industry".

JACKSONVILLE CHAPTER

The Jacksonville Chapter of American Institute of Industrial Engineers held its meeting on October 11, 1956, at the Mayflower Hotel.

Mr. George H. Baldwin, Patent Attorney, was the speaker. His subject was "Patent Laws and The Engineer."

LOUISVILLE CHAPTER

Mr. Walter E. Knight, Director of the Research Division, Louisville Chamber of Commerce, was the speaker at the September meeting of the Louisville Chapter. His subject was "Industrial Development in the Louisville Area".

Mr. Knight defined his topic as "those activities which point towards acquisition of new industries for a given area, or extension of existing industries, or keeping industries at home".

The October meeting was held at the Kentucky Hotel, October 17. Professor T. E. Bartlett, Purdue University, was the speaker. His subject was "Applications of Linear Programming".

Professor Bartlett has a Masters Degree in Industrial Engineering from Columbia University. His familiarity with the subject stems primarily from his work at Hughes Aircraft Corporation as a Senior Industrial Engineer.

He headed a group on systems analysis which led to design work for digital computer applications. He has six years of consulting experience in industry, and at present is a member of the management sciences research group at Purdue.

The November meeting was held November 14, 1956. Dr. Irwin P. Lazarus spoke on "Development of Management Controls". The speaker is a noted author in industrial engineering subjects and currently is Director of the Ordnance Management Engineering Training Program.

The January meeting was held January 16, 1957. The subject was "New Horizons in Time Study" and was presented by Dr. Gerald Nadler, Head of the Department of Industrial Engineering, at Washington University, St. Louis, Missouri. The speaker has an impressive array of degrees, titles, and publications bearing his name.

MIAMI CHAPTER

The Miami Chapter held its first meeting of the 1956-1957 activity year on October 18. This meeting concerned itself with plans for their Fifth Annual Meeting on Time and Motion Study and Management.

This meeting was held at the Columbus Hotel, in Miami, on November 29 and 30. Two of the outstanding speakers at this meeting were Professor Howard Emerson, our National President, and Dr. James Apple, of Michigan State University.

The Miami Chapter is to be commended for an early start in the year's activities. A more complete report of this meeting will be found in a later issue of the *Journal*.

NEW YORK CHAPTER

The New York Chapter will be host to the 8th Annual Conference and Convention of the AIIE next year in New York City. The Conference (let's call it that to be brief) will be held at the Hotel Statler on May 16, 17 and 18th. The first two days will consist of papers and other presentations of interest to the profession; the last day, the Convention portion, will be spent conducting the business of the Institute.

To date, the New York Chapter has put almost nine months of work into the planning and preparation of the Conference. Before May arrives, this will be extended to seventeen months. The Chapter is determined that this Conference will be (as each past Conference has been) better than its predecessors. These long months of work are designed to realize this determination.

The affairs of the Conference are directed by the Conference Planning Council headed by Co-Chairmen Alex Rathe and Frank Gryna. Also on the Council are the Directors of the various activities of the Conference: Planning Services, Finance, Public Relations, Programs, Arrangements, Registration, Reception and Exhibits.

The Conference organization is being set up as carefully as any well-planned permanent group. The members of the Council have prepared procedures, position descriptions, budgets and time schedules of operation of the activities of the Conference. Even though this organization will be dissolved after the Conference in May, the planning and organization is of first importance. It will insure a successful conference. It will be an example of what well-applied industrial engineering can accomplish. It will, through a procedures manual being prepared, supply future conventions with a headstart on their own planning and organizing.

PHILADELPHIA CHAPTER

Mr. John M. Waligora, Chief Engineer, Merck Sharp & Dohme, Division of Merck & Co., Inc., was the speaker at the September meeting. His subject was "Problem Solving and Selling." Mr. Waligora discussed and illustrated with slides the various aspects involved in problem solving and selling. It was stressed that many good projects are turned down by management because engineers have failed to do an adequate selling job. Techniques which may be used in selling ideas were developed.

Mr. Paul Goggi, of Goggi and Race, Management Consultants, spoke on "Maintaining Good Labor Relations" at the October meeting. In maintaining good labor relations it is important that management is aware of those persons who exert the most influence and control over the employees in the organization. This may not necessarily be the union leadership. Other basic factors which must be observed in maintaining good labor relations are the need to get all the facts in each dispute, the need for integrity of both parties, and the need for adequate communications.

Mr. Goggi stated that there is a close tie in between Industrial Engineering and Labor Relations. With the advent of automation many unions are finding themselves in the midst of a struggle for leadership between the younger and older workers. This may have serious implications in future contract negotiations since in many instances youth does not possess the necessary maturity and responsibility.

ST LOUIS CHAPTER

The regular meeting place of the St. Louis Chapter has been changed to Ruggeri's Restaurant, 2300 Edwards Street. The time and date of the monthly meetings remain unchanged—the second Wednesday at 6:30 P.M.

The program committee under the chairmanship of Mr. Martin C. Bauer, has arranged a fine program schedule for this year. It includes the following speakers and subjects:

Dr. Nathan Kohn, Jr. of Nicholson-Kohn Assoc., Inc., "Communications—Science or Art"; Mr. William Aiken of Methods Engineering Council, "Indirect Work Standards"; Mr. Clifford N. Sellie of the Work Factor Co., "A Proven Predetermined Motion Time System"; Mr. Robert Kanter of United Automobile Workers AFL-CIO, "Labor-Management, Problems and Promise of Tomorrow"; Mr. Dickey Dyer of Welling and Woodard, In-

dustrial Consultants, "Compatibility—A Requirement for Successful Mergers as Well as Successful Marriages"; and Mr. William R. Vogel of Department of Army Ordnance Corps, "Mathematical Programming". In addition to the above speakers, a program with the graduating students of Washington University and a dinner dance have been planned. Individual program chairmen for the above meetings include Mr. J. R. Bodine, Mr. V. J. Blocker, Mr. R. H. LeSage, Mr. E. H. Walker, Mr. W. L. Penniman, Mr. D. J. Kaufman, Dr. J. Goldman and Mr. R. Kluge.

On March 14-15, 1956, a Midwest Regional Work Measurement Conference will be held in St. Louis. Subjects to be covered during this conference include work sampling, measurement of non-repetitive work, pace rating, queing theory, human engineering, communications, and linear programming. Mr. Ken Gavin is chairman of the conference.

Membership in our chapter has increased to 132. This, as of November, represents a 32% increase in membership in the last nine months. The average attendance at our meetings is about 75.

SYRACUSE CHAPTER

The first meeting of the Syracuse Chapter was held on September 11, in Sherrill, N. Y., at the Oneida Ltd. Plant.

A conducted tour of plant facilities, layout and engineering procedures was provided by the management of Oneida Ltd.

Following the plant tour, a short business meeting was conducted by M. English, where committee chairmen reported respectively on the progress of their assignments.

Refreshments and an excellent dinner were enjoyed later by 43 members at the Sherrill, N. Y., American Legion Club Room.

A new type program was initiated at Chapter 13's first meeting. Mr. W. E. Dowling, the program chairman and vice president of the Syracuse Chapter, had arranged a panel group of Oneida Ltd. Executive Staff Members. These members were:

Mr. Hamilton Allen	V.P. in charge of manufacturing
Mr. Arthur Pohl	Director of Ind. Eng.
Mr. Ray Milnes	Director of Personnel
Mr. Harry Farmer	Director of Prod. Planning
Mr. Stewart Hill	Director of Engineering
Mr. Henry Allen	Gen. Superintendent of Factories

All questions asked were answered by the panel group. The informative and educational significance of this type program is attested to by the late hour the meeting disbanded and allowed the Oneida Ltd. Executive Staff to get home.

Notables attending this meeting included:

R. S. Rice	Factory Management (Periodical)
M. English	Chief Ind. Engr. Lipe Rollway Corp.
J. S. Schmitt	Supervisor Work Stds. Engr. General Motors Corp.
E. Parker	Manager of Planning General Electric
A. Sebell	Supervisor Ind. Engr. Will and Baumer, Inc.
W. Snover	Supervisor Prod. Engr. General Motors Corp.

Of particular significance, the plant tour had shown the application of incentive rates to highly skilled direct labor and skilled craftsmen. The high quality of Oneida's silver is proof of the intelligent application of industrial engineering techniques and progressive management practices.

A book entitled "The First Hundred Years" which gives excellent background data on this corporation was presented to all who attended by the Executive Staff of Oneida Ltd.

TOLEDO CHAPTER

Mr. F. L. Metzger and Mr. L. J. Smith acting as a team are the motivating force behind our Program & Publicity Committee and through their efforts a theme developed for the 1956-57 program year which is "Industrial Engineering in Today's Industry". This theme is broken down into several sessions each on the Job, the Individual, and the Tools of Industrial Engineering.

Mr. John Anderson, Staff Manager Production Engineering and Director Forward Planning for the Chrysler Corp., Engine Div., Highland Park, Mich. spoke on "The Position of the Industrial Engineer in Automation". His talk at our October meeting pointed out how the Industrial Engineers education and training ideally fits him for a major role in the program.

Our November meeting aroused considerable interest as Mr. Ralph Parry, Advance Engineer, Vacuum Cleaner Dept. of General Electric spoke on "How a Brainstorm Session Works". This new management tool is not to be overlooked.

"Work Simplification—The Most Effective Tool in Todays Industry" is the topic to be presented at our January meeting by Mr. Floyd Simerson, Chief Industrial Engineer, Sears and Roebuck Co., Chicago, Illinois.

In February we hope to have Mr. W. F. Rockwell, Jr., Rockwell Manufacturing Company, Pittsburgh, Penn. speaking on "Management Looks at the Industrial Engineer".

Our Chapter has two delegates, Mr. R. A. Cubbedge and Mr. E. Leibroch appointed to represent our group at the Toledo Technical Council. Mr. Cubbedge is also the secretary-treasurer of this Council. One of the six aims and objectives of this Council is to provide a headquarters building which will provide meeting, club and dining facilities for the twenty eight technical groups represented on this Council.

TULSA CHAPTER

The Tulsa Chapter of AIIE had for its October meeting a tour of the Bartlett Collins Glass Company at Sapulpa, Oklahoma. Bartlett-Collins is the only tableware manufacturer in the southwest region. Their operations include the molding, tempering, decorating, and packing of many different shapes of tumblers, pitchers, vases, etc. The Chapter was fortunate in that the plant was in full operation at the time the tour was taken. Not only were members able to see the making of these tablewares, but they also witnessed hand, screen, and spray decorating.

For its November meeting the Tulsa Chapter had Mr. L. Harold Wright, Vice President of the National Bank of Tulsa, as its guest speaker. His subject was the, "Industrial Potential of Tulsa and Eastern Oklahoma." Mr. Wright has gained considerable recognition for his work in the field of industrial development. As Manager of the Industrial Department of the Tulsa Chamber of Commerce for nine years, he was instrumental in bringing several valuable industries to Tulsa and other towns in Eastern Oklahoma. He has also helped bring about improvements in the laws affecting business and industry in Oklahoma. Mr. Wright is first vice president and a director of the Oklahoma Development Council, the organization which sponsors the annual Oklahoma industrial tours. In his talk Mr. Wright pointed out that Tulsa's character is changing from a completely oil-centered economy, and its industrial capacity apparently is unlimited.

WINSTON-SALEM CHAPTER

The first meeting of the 1956-57 season of the Winston-Salem Chapter of AIIE was held September 25, 1956. The guest speaker was Mr. John M. MacBrayne, Southeastern Regional Vice President of the AIIE and Manager of the General Services Division of Union Bag - Camp Paper Corporation, Savannah, Georgia, who spoke on "The Industrial Engineer and His Professional Responsibilities". He pointed out that since the industrial engineer has achieved public acceptance and recognition, he must meet his professional responsibility both at the local and national level. Mr. MacBrayne listed three areas of activities open to engineers:

(1) Create interest in engineering and science through voluntary teaching in high schools where there is scarcity of teachers of these subjects;

(2) Enter into community activities where there is a need for people who have been trained to analyze situations; and

(3) Use technical know-how to help develop and teach better use of technical resources in the area.

The second meeting of the season was held October 25, 1956. Dr. Robert G. Carson, Jr., Professor and Head of the Industrial Engineering Department of North Carolina State College, spoke at the dinner meeting. His topic was "Accuracy in Industrial Engineering", which covered the current status of several I.E. techniques with emphasis on work measurement and rating. It was gratifying to the chapter to see the active interest in the discussion that followed the talk, especially by the visitors who were present from several surrounding cities and from as far as Lynchburg, Virginia.

Dr. Carson also reported that action had been initiated to form another AIIE Chapter in the Raleigh-Durham area.

BOARD OF TRUSTEES' MEETING

Columbus, Ohio

October 13, 1956

The Board of Trustees of AIIE is the official governing body of your organization. This group meets to conduct business for you twice a year. The official minutes of the October Board of Trustees' meeting are published in the Journal to keep you informed of AIIE activity.

President Emerson called the meeting to order at 9:35 A.M. Attending:

H. P. Emerson	President
J. L. Southern	Executive Secretary
F. T. Geyer	Assistant Executive Secretary
S. D. Veirs	Treasurer
R. P. Updegraff	Vice President (Central Region)
J. Nordahl	Vice President (Western Region)
F. J. Titler	Board Member at Large
F. F. Groseclose	Board Member at Large
S. Kyle Reed	Board Member at Large
E. L. Slagle	Past President
D. G. Malcolm	Past President
Don A. Trenwith	Business Administrator (Natl. Hdq.)

1. *Minutes of May 18, 1956 Board Meeting*—Mr. Slagle moved that the minutes of the May 18, 1956 Board Meeting be approved as written. Seconded by Mr. Titler. Motion carried.

OLD BUSINESS

2a. *Proposed Organization Changes*—Mr. Titler reported on the Organization Committee Meeting which was held Friday Afternoon, October 12. Mr. Titler read the attached minutes of that meeting.

Mr. Titler also read the attached Job Description for the office of First Vice President.

Mr. Slagle reported that the following committees would continue to report to the President:

Advisory Committees
Professional Relations Committee
Organization Committee
Financial Committee
Long Range Planning Committee
Special Surveys Committee
Journal Committee
Operating Committees

The Regional Vice Presidents and the Directors will report to the First Vice President.

Mr. Titler moved that the Job Description be adopted for the office of First Vice President. Seconded by Mr. Southern. Motion carried.

The hiring of a paid Executive Secretary was discussed.

Mr. Titler moved the Executive Secretary be a full-time voting member of the Board of Trustees and Executive Committee except when the job of Executive Secretary is under discussion and that such a constitutional change be submitted to the membership for vote. Mr. Veirs seconded. Motion carried.

Mr. Geyer moved the office of Assistant Executive Secretary be abolished and that such a constitutional change be submitted to the membership for vote. Seconded by Mr. Updegraff. Motion carried.

The Board feels that since a full-time paid Executive Secretary will be hired, an Assistant Executive Secretary will not be needed.

Mr. Veirs moved the nominating committee proceed under the Constitutional provisions to nominate candidates for the office of First Vice President and submit them to the Board of Trustees for a mail vote, to elect a man to the office for the remainder of the year. Seconded by Mr. Southern. Motion carried.

2b. *Affiliation With Other Societies*—Mr. Malcolm reported that a committee for the discussion of affiliation with other societies will meet at Purdue in November. Harold Amrine will be host to this meeting. Invitations have been sent to 25 or 30 people.

It will be discussed as to whether we should affiliate with Council for International Progress in Management and what would be involved.

It was also reported that The Institute of Management Sciences has agreed to co-sponsor a Symposium that will be held concurrent with the 1957 Convention. This will give us an opportunity to observe how such co-sponsorship will work.

2c. *Other Old Business*

2c1. *Chapter Incorporation*—Mr. Updegraff moved that we accept the report given by Mr. Southern regarding Chapter Incorporation and take no further action at this time. Seconded by Mr. Groseclose. Motion carried.

NEW BUSINESS

3a. *Membership Report*—The Board of Trustees reviewed and discussed the membership report.

3b. *Financial Report*—The Board reviewed the Financial Report as presented by the Treasurer, Mr. Veirs.

Mr. Titler moved the Treasurer's report be accepted. Seconded by Mr. Updegraff. Motion carried.

3c. *Budget*—The Board reviewed the proposed budget as presented by Mr. Veirs.

President Emerson read a letter from Dr. Lehrer, Editor-in-Chief of the JOURNAL, regarding the need for an $18,000 annual budget for the JOURNAL.

Colonel Groseclose moved that we increase this budget to $17,000 at this time and furnish the JOURNAL a monthly check for $1,500 for six months; October, November, December, January, February and March. The balance of the $17,000 to be paid on a pro rated basis. Seconded by Mr. Geyer. Motion carried.

Mr. Slagle moved that the income budget be accepted as $72,497.00 as per attached copy, and that Mr. Veirs' suggested cash reserve allocation be approved. Seconded by Mr. Malcolm. Motion carried.

Mr. Veirs moved that an expense budget of $72,497.00 be established as per attached copy. Seconded by Mr. Geyer. Motion carried.

Mr. Veirs moved that the Board of Trustees require 5% of our actual income for the fiscal year be set aside as a cash reserve. This money to be invested by the Executive Committee in accordance with such By-Laws to the Constitution as may be established. (The income from such investments will at some future time provide the membership with many of the additional services that it requires.) Seconded by Mr. Malcolm. Motion carried.

Mr. Updegraff moved that the budget be reviewed Semi-Annually by the Board and be modified to meet changing conditions. Mr. Southern seconded. Motion carried.

Luncheon Recess—12:15 P.M. Meeting reconvened at 1:30 P.M.

President Emerson reported that Ed Slagle has been elected Chairman of the Nominating Committee for the next year.

Mr. Titler moved that the Board endorse the Expense Planning proposal in principal and ask the Treasurer to proceed with its implementation. Seconded by Mr. Malcolm. Motion carried.

3d. *Report on Constitution Change Ballot*—The Board reviewed the attached Tally Sheet which shows the results of the recent Constitution Change Ballot.

3e. *Other New Business*

3e1. *Publication*—Colonel Groseclose moved that the Research Director be authorized to publish the Davidson Book in a cloth-bound edition from Publications Budget. Seconded by Mr. Malcolm. Motion carried.

Colonel Groseclose moved that the approval of the selling price for the book will be left in the hands of the Executive Committee, the price to be recommended by the Director of Research. Seconded by Dr. Reed. Motion carried.

It is estimated that 1,000 copies of the book will cost slightly in excess of $1,700.00.

3e2. *Approval of Plaques*—Mr. Veirs moved that the Board approve the recommendations made by the Executive Secretary. Seconded by Colonel Groseclose. Motion carried.

3e3. *Report on Fellow Nominations*—S. Kyle Reed reported that two nominations for the award of Fellow have been received.

The Committee on Resolutions and Awards was asked to expedite and circulate information regarding the Fellow awards.

3e4. *Public Relations Proposal*—Mr. Slagle moved that George Gustat be permitted to distribute the type of information covered in his proposal, obtaining first, however, approval of the Executive Committee. Seconded by Mr. Veirs. Motion carried.

3e5. *Report on Affiliate Study*—The report on Affiliate Study was reviewed by the Board. No action was taken at this time.

3e6. *Report on National Tour Proposal*—Kyle Reed reported on the National Tour Proposal.

Mr. Slagle moved that the Board adopt the program outlined by Kyle Reed in principle with the provision that further thought be given to financing and that this matter be the responsibility of the Director of Programs. Seconded by Mr. Southern. Motion carried.

3e7. *Request from the University of Puerto Rico*—Application for a Student Chapter Charter from the University of Puerto Rico was presented and President Emerson agreed to have this matter investigated further through the proper committees.

3e8. *Civil Service Committee*—A Civil Service Committee was formed with Frank Geyer as chairman to pursue the problem of definition of Industrial Engineering in the Civil Service and Armed Forces.

3e9. *Adjournment*—S. Kyle Reed moved to adjourn the meeting at 3:45 P.M. Mr. Updegraff seconded. Motion carried.

3e10. *Next Meetings of Executive Committee*—

November 17, 1956
9:00 A. M.
National Headquarters
December 8, 1956
9:00 A. M.
National Headquarters
January 19, 1957
9:00 A. M.
New York City
February 16, 1957
9:00 A. M.
Knoxville, Tennessee

(Institute Interests continued on p. 29)

New Wiley titles for the Industrial Engineer . . .

ELEMENTS OF SUPERVISION, Second Edition

By WILLIAM R. SPRIEGEL, *University of Texas;* EDWARD SCHULZ, *R.C.A. Laboratories,* and WILLIAM B. SPRIEGEL, *Northwestern University.* This new edition of a well-known guide to industrial supervision is now extensively revised. Important subjects for the modern supervisor are discussed fully in seven new chapters. One of these new chapters is a unique study of the supervisor's part in promoting mental health in the factory. Others cover the supervisor's role in motion and time study, interviewing, and materials control. Practical, brief, and clear, this edition maintains the same good balance of principles and methods which made the first edition a favorite in industrial management. *1957. 349 pages. Illus. $6.00.*

LOCATION AND SPACE-ECONOMY—A General Theory Relating to Industrial Location, Market Areas, Land Use, Trade, and Urban Structure

By WALTER ISARD, *University of Pennsylvania.* The author of this work develops a more adequate theory of location and space-economy in order to improve the spatial and regional frameworks of the social sciences. He shows how the general principles of location and space-economy furnish penetrating insights into the operation of economic processes in the real world. His theory traces the social and economic forces which determine plant location, industrial concentrations, and the geographic spread of industry. The book shows the relationship of trade theory and location theory, and applies their principles to every-day problems. A Technology Press book, M.I.T. *1956. 350 pages. Illus. $8.75.*

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RECENT READABLES

AUTOMATION

"Evaluating Machine Tool Arrangements for Automated Production", by C. G. Menard, *Automation*, August, 1956.

Following a discussion of basic fundamentals to be kept in mind when considering the installation of an automated setup, this article classifies machine-tool automation into four types: (1) circular index automation; (2) in-line index automation, (3) constant travel automation; and (4) unitized automation. The author analyzes these systems and points out the favorable and unfavorable aspects of each type. Also of interest is the author's description of various kinds of control equipment and feedback systems.

"Chemical Computing", *Chemical and Engineering News*, Page 3542, July 23, 1956.

Automation, moving rapidly and deeper into chemical plants, is looking forward to over-all control systems. The computer will be one of the key units when such systems are developed. At present precision instruments and controls use many analog devices, and they are accurate enough to operate most modern plants with human supervision. But, it is conceivable that combinations of analog and digital computers could give a more satisfactory over-all system. a digital computer would supervise local individual analog control units to put a plant's operation at the optimum. While such an achievement is still in the future, computers are now cutting weeks, and even years, out of time needed for many research problems. The movement is so fast that one of the big problems five years hence probably will be trained personnel to operate and maintain the computers.

"Let's Look at the Available Business-Data Processors", by James Gibbons, *Control Engineering*, July, 1956.

A detailed report of the characteristics of available and planned data-processing equipment that indicates the characteristics that are most important in business applications. Pointing out that electronic equipment is affecting the organization of business operations and, in turn, that certain business operations are affecting the design of current and future processors, the author discusses areas in which both organization and design must compromise for optimum results.

"Applied Automation", a group of significant articles from the pages of *Automotive Industries*, edited by J. R. Custer, 1956, Chilton Company, Philadelphia, Pa., 236 pages.

These articles cover automation in machining, stamping, welding, forging, heat-treating, plating, painting, inspection, testing, assembling, and other operations in the automobile and aircraft industries. The book is indexed by broad subjects.

GENERAL

"Wage Incentives", *National Association of Manufacturers, Employee Relations Department*, 2 East 48th Street, New York 17, N. Y., 25 cents.

Examines the place and use of money incentives as a stimulus to employee productivity; outlines practical suggestions for developing and maintaining a successful system.

Describes individual and group plans in both small and large companies, relations with unions in developing them, education of employees, and the place of incentives in this day of increasing mechanization. Lists pitfalls to avoid, checklists points to be covered in setting up a policy and incentive plan.

"The Mainspring of Business Leadership", by P. Cifrino, *Harvard Business Review*, Page 55, October, 1956.

The author contends that there is altogether too much emphasis upon management efforts to manipulate, motivate, and control employees—practices which, while designed to strengthen morale, actually weaken it. He became convinced that a more constructive approach would be for the business leader to operate on the frank assumptions that work is a worthy end in itself, that there is an inherent rightness in high standards, and that a decent company environment has an attraction and appeal of its own.

"A New Approach to Office Management", *Management Digest*, August, 1956.

The fast decisions necessary in today's competitive business world are increasingly dependent on information that comes from reports, analyses, and forecasts supplied by an efficient office. Reporting that the number of clerical positions has risen from 7 per cent of all jobs in 1920 to over 25 per cent today, this article sets forth a common-sense approach to problems of personnel, procedures, and office mechanization.

QUALITY CONTROL

"SQC Will Work on Short-run Jobs", by H. R. Harrison, *Statistical Quality Control*, Page 8, September, 1956.

This article relates some of the experiences and benefits derived at Collins Radio Company from using statistical quality control.

Many of the orders at Collins are for quantities of 100 or less of very complex electrical equipment, therefore machines and processes have to be changed from one part number to another part number many times during an 8-hour period. The first attempt to apply control charts to such machines or processes, were discouraging because most of the charts were meaningless. Only one or two plottings would get on the chart and then the particular part number in question would be finished.

The procedure was changed and now, instead of running a control chart on each part number, a control chart is run on the process or machine itself. In other words, records are kept of the number of pieces inspected and the number of defectives found each hour, regardless of part number. At the end of an 8-hour shift, the percent defective work produced by the machine or process is figured from a machine data card and plotted on a percent defective chart. Both data card and chart are prominently displayed over the machine at all times.

MATERIALS HANDLING

"Hitting the High Cost of Handling", by E. Schleusener, *Factory Management and Maintenance*, Page 114, August, 1956.

Part 6 of a 10 part series on cost reduction by the Mueller Brass Company. Nine cases of cost cutting are illustrated, including: scheduling of trailer trains; use of monorail cranes for yard handling; hoppers on wheels; saving space by stacking; use of lift trucks; centralized dispatching; and portable conveyors.

"Hitting the High Cost of Handling", by Ernest Schleusener, *Factory Management and Maintenance*, August, 1956.

Estimating that the cost of handling amounted to 25 per cent of its total manufacturing costs, one company (Mueller Brass Co., Port Huron, Michigan) made handling a major target for cost reduction. This article gives 10 specific examples of the time and money saving methods by which the company saved 45,000 man hours in a year.

ORGANIZATION

"Making an Organizational Analysis", by H. J. Neufield, *Office Executive*, Page 17, October, 1956.

In making an organization analysis, the importance of setting the stage by properly informing all people concerned cannot be over emphasized. Each individual must understand the reason for the analysis and what it is expected to accomplish. The superiors should explain the broad outline of the analysis, and the analyst should explain the details of the plan at a later date.

Assembling the facts can be a tedious task, yet this step must be undertaken with extreme care. The information to look for includes:

1. A complete description of the work for which the individuals are responsible.
2. Source from which the individuals receive their work and place where the work is sent next.
3. Persons to whom the individuals are responsible.
4. Comments and suggestions.
5. Degree of individual productivity.
6. General tone or morale of the group.

"Is Your Company Ripe for Reorganization?", by W. McNeill, Chemical Week, Page 35, August 25, 1956.

Through the war years of the 1940's on up to the present, the chemical industry has enjoyed an economic climate favorable to corporate growth. Earnings have steadily increased. Plant additions, expansions, new product lines and whole new companies have been tacked onto organization charts with unabated regularity.

In such an opulent climate, fundamental weakness in the ability to weather economic squalls could hardly be expected to intrude on management's attention. Chemical firms, large and small, have been too preoccupied with their own dynamic growth. So it's not uncommon today to find organizational infirmities within many outwardly solid companies.

Many chemical organizational studies can be, and have been, developed by competent company executives. This is generally true in large firms that employ many specialized people. Even big outfits, on the other hand, often call on consultants or management experts to pilot them through reorganization from the basic evaluation to the final step.

It involves painstaking effort, but the result should be worth it. Armed with a realistic organization chart, the right management, a sound philosophy of organization and carefully conceived executive job descriptions, a company is well prepared to face the demands of quickening chemical competition.

"The Meaning of Control", by D. S. Sherwin, *Dun's Review and Modern Industry*, Page 45, January, 1956.

"The ability to control is not something that is acquired automatically with increased authority and responsibility, nor is control a synonym for management. What is control and how can it be developed? That question must be answered before management can become efficient and systems effective." Thus the author launches into a discussion of the vital subject. Topics covered are: Basis for Control; Policy Verification; Manager's Responsibility; Control Spectrum; Forecasts and Projections and Terminology.

"Systems Engineering", by J. N. Warfield, OTS, *U. S. Department of Commerce*, Washington 25, 30 pages, 75 cents.

This report, prepared for the Navy, is designed to aid the systems engineer in carrying out his projects. So that it will be useful across the board in industry, technical considerations are eliminated, and only material common to most systems problems is included. Discusses the common factors surrounding any systems engineering problem, the systems design process, the systems survey, the organized project plan and the like.

PLANT LAYOUT

"Newest Concept in Plant Layout", *Factory Management and Maintenance*, Page 100, October, 1956.

Because of large variations in parts and product weight (2 pounds to 10 tons), the engineers of the EC&M Company figured product weight—not just process sequence and travel distances—into their layout calculations. This approach has resulted in a 52 per cent cut in handling labor utilized by EC&M and a 15 per cent increase direct labor efficiency.

"They Call It Peripheral—It's News in Plant Layout", by B. Johnson, *Factory Management and Maintenance*, Page 114, October, 1956.

Prefabricating houses mass-production style uses a lot of material. Material in big, awkward to handle pieces. And when it leaves the plant, the material is in even bigger pieces—whole walls, roof sections, gables, etc. So the prime consideration in layout of the plant (of which shipping and receiving operations are an integrated part) was easy, short-line handling.

Materials start from three sides, move toward the middle—then down the middle to the fourth side. Most of that fourth side is a shipping dock (one end is a truck receiving dock). Crossover of material flow lines is an absolute minimum.

The peripheral flow arrangement, however, makes physical expansion of the plant difficult—the building is hemmed in by railroad trackage on three sides, the lumber supply depot on the fourth.

WORK MEASUREMENT

"How to Take a Machine Shop Time Study", by R. A. Ratner, *Iron Age*, Page 95, September 13, 1956.

Accurate, fair work standards stem from intelligent time study observations. . . . In turn, good time studies should be preceded by a careful job breakdown. . . . Fortunately, machine shop operations generally fit rather well into specific work element.

But honest standards depend on a number of less clearly defined factors as well. . . . This article lists these factors, tells why and where they enter the picture, shows how to blend them into a successful over-all study.

"Now—Record Keeping Goes Really Automatic", *Factory Management and Maintenance*, Page 94, October, 1956.

By using the Automatic Production Recording (APR) machine, a new IBM development, the R. R. Donnelley and Sons Company has been able to facilitate the setting of time standards on complex, long-cycle production jobs.

Donnelley believed that existing standards made by stopwatch studies and manual calculations could be made more statistically accurate. Timestudy personnel lost interest when they were required to spend hundreds of hours in calculation. And the cost of calculating such standards was important to the cost-reduction program.

The problem was solved by using an APR system, which cut calculation time 66 per cent by putting the element-time data into a form (i.e., a 5-channel punch tape) that can be fed to tabulating equipment.

As soon as enough data are in hand, the calculator comes up with an elemental mean, standard deviation, coefficient of varia-

tion, coefficient of standard error of the mean—in short, sets up a statistically accurate time for the element.

"How to Make Machine Capability Studies", by D. G. Meckley, III, *American Machinist*, July 30, 1956.

A description of how one company (York Corporation, York, Pennsylvania) developed a practical method to answer the three questions fundamental to every phase of manufacturing activity: What can a man do? What can a machine do? What can the combination of man and machine consistently produce? Although the machine capability study is a relatively unfamiliar concept to many, the author is convinced that it performs a vital function for which inspection or quality control systems are not an adequate substitute.

WORK SAMPLING

"Work Sampling at Executive Level", by J. B. McNaughton, *Advanced Management*, Page 12, October, 1956.

The author discusses the successful application of the Work Sampling Technique at executive level, showing the method used to bring to light solutions to problems which are usually buried beneath the daily routine and in the work patterns of persons who are too busy and have too little time to reflect on their own personal work habits.

The successful application of this technique requires open-mindedness and objective thinking of the highest degree within the executive family. Work sampling at the executive level is a technique which has a place in the tool kit of modern business managements. Proper handling of this technique can lead to greater effectiveness in the operations of the executive family. In the hands of responsible managers and specialists, it is a technique which bears thoughtful consideration.

BOOKS

Plant Location in Theory and in Practice, by M. L. Greenhut, published by the University of North Carolina Press, Chapel Hill, N. C., 338 pages, $7.50.

This book has been written principally for the professional economists and graduate students. It examines the transition from the purely competitive approach to the monopolistically competitive framework of today. Attention is focused on data which make the plant site a means of economic control rather than simply the basis of productive operations.

In the first principal part, the following main topics are considered: the theory of the least cost location; locational interdependence and the market area; integration of the leading theories of plant location.

The author breaks down integrated theory in the second main section and examines the influence on plant location of transportation, processing costs, demand, and the cost-reducing and revenue-increasing factors.

Factors of plant location are applied to the site selections of eight small nonbranch firms in Alabama, in the third main portion of the book.

In the last section, the author evaluates the basic premises of past and present day location theory, determines the modifications required by practice and offers a general theory of plant location.

Seminar on Automation, Proceedings, (Pennsylvania State University, June, 1955), edited by Chester Linsky. Available from Extension Conference Center, The Pennsylvania State University, University Park, Pennsylvania, $5.

These proceedings include the papers, workshop discussions, and question and answer sessions which made up a seminar held for product designers and manufacturing engineers interested in learning the tools and techniques associated with the organization, planning, design, and operation of automated systems. The twenty papers and one panel discussion included deal with machine-tool automation, hydraulics in automation, process controls, automatic assembly machines, digital control, economic considerations, labor problems, and related topics. A number of full-page photographic reproductions are used to illustrate the papers.

Production Control—Text and Cases by William Voris, Published by R. D. Irwin, Inc., Homewood, Illinois, 413 pages, $7.20.

Various facets of production control for industrial plants are covered in this comprehensive book. It reflects thinking and research of pioneers and leaders in the field of industrial management and control. In the publication is shown the practical application of fundamental theory and principles at specific manufacturing concerns.

Among the 16 chapters in the book are the following: The function of production control and its place in the organizational structure of a manufacturing concern; production control in the small company; visual and mechanical control in manufacturing; and control and the automatic factory—continuous manufacturing.

Automation and Electronics, published by Management Research Service, 1342 Cherry Street, Kalamazoo, Michigan, 26 pages, $1.00.

This is, reportedly, the only available guide to outstanding case studies in the plant and office. It contains reading references to ideas and practices in automation which have worked successfully.

The booklet covers more than 200 outstanding case studies contained in books, conference proceedings, and important periodicals in the fields of automation, electronics and general management. Standard indexing services do not list 70 per cent of these case studies.

To assure maximum usefulness, this booklet is organized according to important aspects of the subject of automation, and also to major industry. Alphabetical index of companies has been included to facilitate the location of references to particular companies.

Business Information: How to Find and Use It, by Marian C. Manley, Harper and Brothers, 49 East 33rd Street, New York 16, New York, 265 pages, $5.

Out of her thirty years' experience as Business Librarian in the Newark (N.J.) Public Library, Miss Manley has written this volume which fills a long-standing gap in the business bookshelf. Whether you are seeking information on markets, business conditions, labor relations, or any of the many other topics of real concern to business, this volume will point the way to the most reliable sources.

The author shows you how to get information from trade associations, government bureaus, industrial directories, and of course, business libraries. Small companies, unable to support their own business libraries, will find the volume particularly useful. It provides straight-forward directions for locating the basic material without which business could not operate—information.

Computers: Their Operations and Applications, by E. C. Barkeley & Lawrence Wainwright, Reinhold Publishing Corporation, New York, 1956, 366 pages, $8.

An account of the newest developments in the techniques and equipment of automatic computing, written both for the engineer and for the business executive interested in determining where computers can fit in with his company's operations. The book also includes a checklist of computer characteristics, a list of organizations from whom automatic computing equipment can be bought or rented, an extensive glossary of terms used in the automatic computing and allied fields, and a bibliography.

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Beiley, Irving, Ansco, Charles St., Binghamton, N. Y. *48S-3*
Belanger, Lucien, Lucien Belanger & Assoc., 781 Rockland Ave., Montreal 8, Quebec, Canada *6S-3*
Belcher, Herbert R., 1800½ Hazard, Houston 19, Tex. *22S-4*
Belge, Albert C., 6356 Penrod, Detroit 28, Mich. *47S-4*
Bell, Dario R., 521 Woodland Dr., Kenmore 23, N. Y. *49S-3*
Bell, James R., 3441 Austin St., Corpus Christi, Tex. *22AF-3*
Bell, Lawrence F., 4240 Suzanne Dr., Palo Alto, Calif. *37S-4*
Bell, Wm. K., 206 Center, % Gen. Del., Itasca, Ill. *25S-4*
Bellaschi, Julius J., 7417 S. E. Yamhill, Portland 16, Ore. *6A-1*
Belzer, Oliver J., 819 Sutter St., San Diego 3, Calif. *29A-2*
Benadum, John E., 1361 Haines Ave., Columbus 12, O. *1A-2*
Benarey, Henry A., I. & C. E., Ind. Consultant, P.O.B. 1142, Jerusalem, Israel *6S-3*
Benatar, Leo, 1352 North Ave., N. E., Apt. 3, Atlanta, Ga. *6A-2*
Benator, Josiah V., 1482 E. Rock Springs Rd., N. E., Atlanta, Ga. *6A-2*
Benedict, John R., 9412 Kennerly St., Temple City, Calif. *23A-1*
Benes, Joseph F., 722 Verne, San Antonio, Tex. *39A-2*
Benjamin, Clyde A., 2715 State St., Butte, Montana *6A-1*
Benjamin, James F., 14 Pomona Ave., Fairlawn, N. J. *61A-2*
Bennett, J. W., 1302 Ware Rd., Richmond 26, Va. *6A-3*
Bennett, Keith Dee, 20210 Franklin Ave., Saratoga, Calif. *37S-3*
Bennett, Jr., S. Henry, 636 Marshall St., Salem, Va. *6S-3*
Bennett, Wm. S., 70 W. Poplar, San Mateo, Calif. *37S-4*
Bennett, Wm. V., Savannah Sugar Refining Corp., P. O. Box 710, Savannah, Ga. *26A-1*
Bennington, Paul W., Chief Indust. Engr., The Steel Co. of Canada, Ltd., Wilcox St., Hamilton, Ontario, Canada *6S-3*
Benson, Norman A., 3508 W. Brandon St., Seattle, Wash. *20A-2*
Benter, Clarence L., 5805 Northgrove Ave., Fair Oaks, Calif. *43A-2*
Bentley, Louis E., 943 College Ave., Columbus 9, Ohio *1A-2*
Bentley, Wm. D., 10217 N. E. 20th Pl., Bellevue, Wash. *20A-2*
Bentley, Wilson J., School of Ind. Engr. & Mgmt., Okla. Inst. of Tech., Okla. A & M College, Stillwater, Okla. *15S-3*
Bentz, Fred A., 8815 Cordova Ave., N. E., Albuquerque, N. M. *59S-3*
Bentz, Wm. H., 6221 Southerest, Ft. Wayne, Ind. *34A-1*
Berger, Jr., Wm. G., 413 W. Morrell St., Jackson, Mich. *6S-3*
Bergman, Carl A., 1649 W. Craig, San Antonio, Tex. *39A-2*
Bergman, Kenneth E., 124 Homer Pl., Pittsburgh 23, Pa. *3A-1*
Bergquist, Roger I., 2846 Homer Ave., Erie, Pa. *51A-2*
Berkey, Charles M., 2919 Bellknoll, Dallas 29, Tex. *10A-1*
Berkowitz, Joseph L., 30-26 35th St., Long Island City 3, N. Y. *5A-2*
Berler, Martin A., 745 Woodbridge Lane E., Levittown, N. Y. *58-4*
Berlin, Harrison S., National Screw & Mfg. Co., 2440 E. 75th St., Cleveland, O. *7S-4*
Bernauer, Emmett A., 2133 Griffith, Louisville 12, Ky. *18A-1*
Bernbaum, Henry I., 2583 Ashurst Rd., Cleveland 18, O. *7S-4*
Bernstein, Martin, 2194 Barnes Ave., N. Y. 62, N. Y. *5A-2*
Bernstein, Richard K., 322 Central Park W., N. Y. 25, N. Y. *5A-2*
Berry, Clayton H., U. S. Steel Corp., Gary Steel Works, Gary, Ind. *53S-3*
Berry, Harold P., 1 Estel Rd., Little River Hills, Fairfax, Va. *14S-4*
Berry, Jr., Wilbur G., 117 Stuart St., Montgomery, Ala. *17A-1*
Bertie, Cecil E., 1828 Elizabeth Ave., Winston Salem, N. C. *21A-2*
Bertoldo, Frank B., 617 Colman Pl., Okla. City, Okla. *57A-1*
Best, Clebern E., Kaiser Aluminum & Chem. Corp., 1924 Broadway, Oakland, Calif. *12A-1*
Best, John F., 310 Lake St., Trussville, Ala. *9A-2*
Bethea, Nelson H., 101 Ashland Lane, Oak Ridge, Tenn. *11S-4*
Betts, Charles F., 5632 Bangor, Seattle, Wash. *20S-4*
Beverly, Marnello B., 1731 Spring Brook Rd., Alcoa, Tenn. *11S-4*
Bewig, Norman O., 9811 Lorna Lane, St. Louis 21, Mo. *16A-1*
Bezzant, Harold A., 6220 So. 2200 W., Salt Lake City, Utah. *50AF-4*
Bhattacharji Subodh Chandra, 103 Dharamtolla, Post Belur Math Howrah, India *4A-S*
Biddle, John M., 6973 Paddison Rd., Cincinnati 30, O. *8S-4*
Biehn, James H., 104 Magnolia Pl., Portland, Tex. *6A-1*
Bigelow, Charles W., 810 Shoreland Dr., Winston-Salem, N. C. *21S-4*
Bidglow, Clifford G., F-4 Kingsley Terr., 11 Bedford Ave., Norwalk, Conn. *5A-2*

Biggane, James F., The Maytag Co., Newton, Iowa *46S-4*
Bigger, Thomas O., 1002 Bragg Circle, Tullahoma, Tenn. *64AF-3*
Biggers, Jr., Wm. P., 333 Adams St., Decatur, Ga. *6A-2*
Biggs, Hershel W., 315 NE 10th St., Grand Prairie, Tex. *10A-1*
Bigus, Joseph L., 338 154 Pl., Calumet City, Ill. *53A-1*
Billawala, S. A., 720 W. 30th St., Los Angeles, Calif. *23A-1*
Billeter, Julius C., 368 G St., Salt Lake City 3, Utah *50S-4*
Binkley, Scott M., Brown-Forman Distillers Corp., 1908 Howard St., Louisville 1, Ky. *18S-3*
Birkelbach, Walton H., 1014 Greer, San Antonio, Tex. *39A-2*
Birn, Serge A., Serge A. Birn Co., Inc., 616 S. Fifth St., Louisville, Ky. *18S-3*
Birnbach, Saul, 3 Andover Rd., Greenhills, Cincinnati 18, O. *8A-2*
Bisgard, Wm. H., 3520 Kearney St., Denver 7, Colo. *32A-1*
Bizzarri, Anthony E., Brainard Steel Div., Sharon Steel Corp. Larchmont Ave., Warren, O. *24S-3*
Bizzell, LeRoy A., U. S. Pipe & Foundry Co., 27th & Chestnut Sts., Chattanooga, Tenn. *54A-1*
Black, David C., Colgate-Palmolive International, 300 Park Ave., N. Y. 22, N. Y. *5A-2*
Black, Howard F., H. F. Black Equipment Co., 1836 Euclid, Cleve. 15, O. *7A-4*
Black, James B., Dogwood Lane, R. D. #4, Chagrin Falls, Ohio *7A-2*
Black, John R., 2501 E. Floyd Ave., Englewood, Colo. *32A-1*
Black, Murray D., 21 Paul Revere Rd., Lexington, Mass. *30A-2*
Black, Peter B., 69-28 173 St., Jamaica Estates, N., Flushing 65, N. Y. *5A-2*
Blackburn, Howard B., 1155 Connecticut St., Palm City, Calif. *29S-4*
Blackman, Wm., 2562 Pitkin Ave., Brooklyn 8, N. Y. *5A-2*
Blackwell, James O., Box 234, Hendersonville, N. C. *0A-1*
Blackwell, Paul H., Wolverine Tube, Div. of Calumet & Hecla, Inc., Decatur, Ala. *6A-1*
Blagg, Lester Lewis, 3924 Summit Ridge, Dallas 16, Tex. *10A-1*
Blaha, Carl G., 317 Ohio Ave., Glassport, Pa. *3A-1*
Blair, Paul D., 124 Benita Ave., Youngstown, O. *24S-3*
Blair, Richard H., 6232 Mayfair Rd., Ft. Wayne 8, Ind. *34A-1*
Blair, Robert E., 1174 Mayfield Ridge Rd., Mayfield Hts, 24, O. *7AF-4*
Blair, 2/Lt., Robert J., Sacramento Signal Depot, Sacramento, Calif. *43AF-4*
Blake, Colin D., 332 E. 52nd St., Savannah, Ga. *26A-1*
Blake, T., Engr. Dept., E. I. duPont deNemours & Co., Wilmington 98, Del. *31S-4*
Blanchard, Donald J., Cleveland Elec. Illuminating Co., 75 Public Square, Cleveland 1, O. *7AF-4*
Blankenship, James M., 669 Kennesaw Ave., Atlanta 8, Ga. *6A-2*
Blekking, Earl, Box 2524, University Station, Gainesville, Fla. *27A-2*
Blisko, Charles, 1355 Lake Hts., Blvd., N. W., Canton, O. *19A-1*
Block, Stanley M., 1505 E. River Rd., Minneapolis 14, Minn. *38S-4*
Blocker, Vincent J., Carter Carburetor Corp., 2840 N. Spring, St. Louis 7, Mo. *16A-1*
Blodgett, Edward, 226 Alameda St., Rochester 13, N. Y. *44A-2*
Bloesinger, Albert T., 5607 Wilber Ave., Parma 29, O. *7A-2*
Blomquist, Robert D., 5017 N. Winchester Ave., Chicago 40, Ill. *25A-1*
Blood, Howard J., 159 Oak St., Geneva, N. Y. *0A-1*
Bloom, Clarence W. H., 123 Forest Hill, Poland, O. *24S-3*
Bloom, Joel N., 621 Ave. Z., Brooklyn 23, N. Y. *5A-2*
Blount, Willard H., 3280 Homewood Dr., Memphis 8, Tenn. *28A-2*
Bluestein, Paul H., 3420 Section Rd., Cincinnati 37, O. *8S-4*
Boake, Jr., Felix J., 5409 B Keeport Dr., Pittsburgh 36, Pa. *3A-1*
Bobo, Ned, Production Mgr., Lyman, S. C. *0S-3*
Bockstruck, Earl L., Laclede Steel Co., Alton, Ill. *16A-1*
Boden, Jerome M., 455 Leslie St., Newark 8, N. J. *5A-2*
Boden, Wm. H., 902 North Main St., Auburn, Ind. *34A-1*
Bodine, Jack R., 1601 Cass, St. Louis 6, Mo. *16A-3*
Boehm, Earl W., 7525 39th Ave., N. E., Seattle 15, Wash. *29S-4*
Boehm, Edward L., Senior Ind. Engr., R. D. Werner Co., Greenville, Pa. *24A-1*
Boesch, Jr., Geo. D., 3812 Bilglade Rd., Ft. Worth 9, Tex. *19S-3*
Boess, Eugene R., 2654 Carlton St., San Bernardino, Calif. *23A-1*
Bogardus, Henry D., P. O. Box 1762, Wichita 1, Kansas *56A-2*
Bogenrief, Charles A., Robertshaw-Fulton Controls Co., Grayson Controls Div., Longbeach 5, Calif. *23S-4*
Bohn, C. E., 8335 E. 15th, Tulsa, Okla. *15S-3*
Bohner, Jr., Roswell J., Houston Natural Gas Corp., P. O. Box 1188, Houston 1, Tex. *22AF-3*
Bohnslav, Paul T., 603 Patterson Rd., Apt. 3, Dayton 9, O. *2A-2*
Boivin, Sherman B., 10103 Hurst St., Bethesda, Md. *14A-2*
Boldman, James W., 2502 Fannin, Houston, Tex. *22A-1*
Boler, Henry R., M. Oster Co., 5055 N. Lydell Ave., Milwaukee, Wisc. *45S-4*
Boling, Ronald W., Ind. Engr. Dept., Univ. of Tenn., Knoxville, Tenn. *11S-4*
Bomar, Hubbard H., 4205 Martha Ave. (Houston Acres), Louisville 18, Ky. *18S-3*
Bonde, James L., R. R. Donnelley & Sons Co., 350 E. 22nd St., Chicago 16, Ill. *25A-1*
Bongirne, John T., 2018 Voorhies Ave., Brooklyn 35, N. Y. *5A-4*
Bonn, John J., 600 Springer Terr., Los Altos, Calif. *37AF-3*
Bonn, Jr., Walter M., 35 N. 18th St., Allentown, Pa. *0A-1*
Bonnevier, Frank C., 104 Calvin Ct., S., Tonawanda, N. Y. *49A-1*
Bonofiglio, Louis F., 781 Hilton Rd., Walnut Creek, Calif. *12S-4*
Boody, Robert W., 39 Lake Trail E., Packanack Lake, N. J. *61A-2*
Borden, John S., 291 Summer St., Lynn, Mass. *30S-4*
Borer, Jr., Sidney A., RFD #3, Dock Rd., Madison, O. *7S-4*
Borge, Henry C., Concord Rd., Concord, Tenn. *11A-2*
Borke, John, 7010 Pearl Rd., Midpark Branch, Cleveland 30, O. *7S-4*
Borman, Robert C., 2814 Connecticut Ave., Washington 8, D. C. *14A-2*
Boroughs, Lawrence, Rt. 5, Box 417, No. Little Rock, Ark. *0A-1*
Bothmann, John R., 8323 Dalewood Ave., Rivera, Calif. *23A-1*
Botsford, Richard A., 3450 Atlantic, N. E., Warren, O. *24A-1*
Bottiggi, Theodore A., Day & Night Div. of Carrier Corp., 700 Royal Oaks Dr., Monrovia, Calif. *23S-4*
Boucherle, Charles H., 364 Fairgreen Ave., Youngstown 4, O. *24S-3*
Boudakian, Charles, 10358 Bellwood Ave., Los Angeles 64, Calif. *23A-1*
Boulais, Frederick P., 5527 S. Dorchester Ave., Chicago 37, Ill. *25S-4*
Bounds, Wallace A., 1042 Mulberry St., Sulphur Springs, Tex. *0A-1*
Bourgoult, Francis F., 3406 E. 81st St., Seattle, Wash. *29S-4*
Bourland, J. E., 2302 Kessler Parkway, Dallas, Tex. *10S-3*
Bowen, David E., 4621 Wyman Dr., Sacramento, Calif. *43A-2*
Bowman, Gordon W., Little Falls Trailer Ct., Wappingers Falls, N. Y. *0A-1*
Bowman, Henry L., 121 S. Pickard, Norman, Okla. *57A-1*
Bowman, Capt., Richard C., Hdq. U. S. Air Force Academy, Denver 8, Colo. *32A-1*
Boyce, Richard C., 2915 Myrtle St., Erie, Pa. *51A-2*
Boyd, James S., 470 36th St., Richmond, Calif. *12A-1*
Boyd, Robert A., 3040 90th Pl., S. E., Mercer Island, Wash. *29S-4*
Boyd, Robert J., 310 S. 16th, Chesterton, Ind. *53AF-3*
Boyd, Thorpe H., 7146 S. Lowe Ave., Apt. 408, Chicago 21, Ill. *25A-1*
Boyer, Robert E., 253 Constitution Dr., Pittsburgh 36, Pa. *3A-1*
Boyett, John K., 500 C Evans St., Bainbridge, Ga. *0A-1*
Boynton, Wm. C., 5136 E. 54th St., Seattle, Wash. *29S-4*
Bracking, Thomas G., 98 Mountain View Ave., San Jose 27, Calif. *37S-4*
Bradford, B. Blain, 517 10th Ave., Salt Lake City, Utah *50A-2*
Bradley, Wm. N., 2505 El Tonas Way, Carmichael, Calif. *43A-2*
Bradshaw, Donald A., 7241 S. Mingo Lane, Madeira, O. *8A-2*
Brady, Edward P., 18713 Kornblum Ave., Torrance, Calif. *23A-1*
Brady, Jr., Ernest L., 2830 Lyndhurst Ave., S. W., Winston-Salem, N. C. *21A-2*
Brake, Robert G., College of Engr., West Virginia Univ., Morgantown, W. Va. *0A-1*
Braker, Erwin R., 531 Washington St., Allentown, Pa. *0A-1*
Branam, Raymond O., 3013 S. Japlin Pl., Tulsa, Okla. *15S-3*
Branch, W. Wilson, Amer. Radiator & Standard, Sanitary Corp., 1541 S. Seventh St., Louisville 8, Ky. *18A-1*

Brandon, D. Marshall, 1401 S. W. 32 Ave., Apt. 5, Miami 45, Fla. *40A-1*

Brandstetter, Charles E., The Hoover Co., North Canton, O. *19S-3*

Brandt, Robert G., 2734 Bennenue, Berkeley, Calif. *12A-1*

Branigan, Thomas L., 1139 Cherokee Rd., Louisville 4, Ky. *18A-1*

Brannen, Geo. L., Edgewater Rd., Rt. #3, Savannah, Ga. *26A-1*

Branstetter, Leo P., RFD #5, Box 118, Valley Station, Ky. *18A-1*

Brauer, Clinton H., 1322 W. Theo St., San Antonio 11, Tex. *39A-2*

Braun, Owen V., 2025 Peachtree Rd., N. E., Apt. 440, Atlanta, Ga. *6A-2*

Brautigam, Dale P., W. Mich. Steel Foundry Co., Muskegon, Mich. *0A-1*

Braverman, Jerry, 1239 Oliver Rd., Huntingdon Valley, Pa. *31A-2*

Brazil, Charles L., P. O. Box 1089, Port Arthur, Tex. *0AF-3*

Breakiron, Lauren P., 10 Eton Crest, Manhasset, N. Y. *5A-2*

Breitmeier, Paul C., 822 W. Taylor St., Kokomo, Ind. *35A-2*

Brening, Henry G., 4685 Alcott, Denver 11, Colo. *32A-1*

Brennan, Prof. Charles W., Lehigh Univ., Bethlehem, Pa. *0S-3*

Brent, Jason, 1375 E. 53rd St., Brooklyn, N. Y. *5A-2*

Brewer, Joseph Z., 7715 Park Pl., Blvd., Houston 17, Tex. *22A-1*

Brewer, Louis T., 1601 Metropolitan Ave., Bronx 61, N. Y. *5A-2*

Brewick, Charles E., R. R. #5, Box 456, Crown Point, Ind. *53S-3*

Brickley, Jack B., 4314 Drury Lane, Ft. Wayne 5, Ind. *34AF-3*

Bridgewater, John B., 253 W. 91st, N. Y. 24, N. Y. *5A-2*

Briggs, Donald C., Ind. Engr., Dept., Bldg. #56, Kodak Park, Rochester, N. Y. *44A-2*

Briggs, John, R. D. #1, Fayetteville, N. Y. *13A-2*

Bright, James R., Harvard Univ., School of Business Adm., Boston 63, Mass. *30A-2*

Brill, Wm. J., 102 E. Adams, Pueblo, Colo. *25S-4*

Briody, Bernard P., 2400 Walton Ave., N. Y. 68, N. Y. *5A-2*

Brisley, Chester L., Wolverine Tube, 1411 Central, Detroit 9, Mich. *47S-4*

Brister, Ghyatt V., 5421 Sapulpa Ave., Oklahoma City, Okla. *57A-2*

Britt, Paul L., 1630 Cornell, Dubuque, Iowa *46A-2*

Brittan, Wesley M., 615 W. Mt. Pleasant Ave., Livingston, N. J. *61A-2*

Broadwell, Latham S., 3641 Woodmont Rd., Toledo 13, O. *36A-1*

Broberg, F. M., Copperweld Steel Co., Warren, O. *24S-3*

Brock, Harvey H., 565 W. End Ave., N. Y. 24, N. Y. *5A-2*

Brock, Jr., Wm. J., 995 Watson Ave., Winston-Salem, N. C. *21S-4*

Brockman, Jacob S., 1208 Mitchell St., Raleigh, N. C. *0A-1*

Brodfuhrer, Anthony, 246 Grassy Sprain Rd., Yonkers 2, N. Y. *5A-2*

Brodrick, Jr., James A., 3548 Eastridge, Ft. Worth, Tex. *10A-1*

Brogden, Frank M., Tennessee Eastman Co., Wage Standards Dept., Kingsport, Tenn. *17A-1*

Brooks, Jr., Charles M., 700 S. 13th St., Lebanon, Pa. *0A-1*

Brooks, Jr., H. Lee, 218 29th Ave., N., St. Petersburg 4, Fla. *0A-1*

Brooks, John A., P. O. Box 1446, Winter Haven, Fla. *0A-1*

Brooks, J. Edwin, 247 Santiago Ave., Redwood City, Calif. *37S-4*

Brooks, Stephen A., 3047 Roe Drive, Houston 17, Tex. *22S-4*

Brooks, Winfield A., 4382 Jett Rd., N. W., Atlanta, Ga. *6A-2*

Broome, John R., John I. Thompson & Co. 921 17th St., N. W., Washington, D. C. *14S-4*

Brougher, Jack L., 17317 Denker Ave., Apt. 1, Gardena, Calif. *23A-1*

Brous, Donald W., Northeastern Engr., Inc., 25 S. Bedford St., Manchester, N. H. *63S-3*

Brown, Allen D., 67 L Franklin Apts., Savannah, Ga. *26A-1*

Brown, Arthur H., 5401 Caleb Ave., Sacremento 19, Calif. *43S-4*

Brown, David A., Dillard, Ga. *0A-1*

Brown, David W., R. D. #3, Bradford, Pa. *0A-1*

Brown, Delno W., Deere & Co., 3300 River Dr., Moline, Ill. *46S-4*

Brown, Ira D., 300 Delaware Ave., McDaniel Crest, Wilmington 3, Del. *0A-1*

Brown, James E., % The Coil Plate Sheet Steel Corp., 4000 Noakes St., Los Angeles 23, Calif. *23A-3*

Brown, Judson T., 104 Kimbark Rd., Rochester, N. Y. *44S-4*

Brown, Melville L., 29 S. W. 1st Ave., Delray Beach, Fla. *0S-3*

Brown, Richard W., 210 Womble Ave., Shumaker, Ark. *0S-3*

Brown, Robert J., 915 E. Princeton St., Ontario, Calif. *0A-1*

Brown, Sheldon H., 817 Monroe Ave., Scranton 10, Pa. *0A-1*

Brown, Wm. H., 615 Eastmoor Blvd., Columbus 9, O. *1A-4*

Broyles, Jr., Charles W., 1730 Magnolia Way, Walnut Creek, Calif. *12A-1*

Broyles, Luther J., 10052 Heyden Ct., Detroit 28, Mich. *47A-4*

Brubaker, Joseph J., Box 1015, Hurley, N. M. *59S-3*

Brubeck, Norman S., 2630 N. Moreland Blvd., Shaker Hts., O. *7AF-4*

Bruce, Sigmund S., Shultz Die Casting Co., 1810 Clinton St., Toledo 7, Ohio *36A-1*

Bruckart, Richard F., Ind. Engr. Dept., A & M College of Tex. College Station, Tex. *0S-3*

Bruckner, II, Arthur, College of Engr., W. Virginia Univ., Morgantown, W. Va. *0A-1*

Brugler, Maynard W., The Timkin Roller Bearing Co., 416 N. Craig St., Pittsburgh 13, Pa. *3S-3*

Brumback, Harry A., 1845 Woodside, Trenton, Mich. *47A-4*

Bruner, Jr., Wm. G., 601 10 St., Tuscaloosa, Ala. *0A-1*

Brusch, Richard G., 8646 Walnut Dr., Munster, Ind. *53S-3*

Bryan, James B., 602 Hillsborough St., Oakland, Calif. *12A-1*

Bryan, James C., 2607 Overbrook Rd., Cuyahoga Falls, O. *52A-1*

Bryant, A. Lynn, OMETP, Ordnance Corps., Rock Island Arsenal, Rock Island, Ill. *46A-2*

Bryant, Broadus M., 2856 Wenonah St., Baton Rouge, La. *41A-1*

Bryant, Marshall G., 209 Forest Hill Ave., Winston-Salem, N. C. *21A-2*

Bryant, Robert C., 121 Merrick St., Rochester 15, N. Y. *44S-4*

Bryant, Wm. N., 614 Chippewa Dr., Jeffersonville, Ind. *18S-3*

Bryant, Jr., Wm P., 106 Murray Lane, Huntingdon, Tenn. *0A-1*

Bryson, Wm. C., 1208 Brockley Ave., Lakewood 7, O. *7A-2*

Buccini, Geo. E., 1541 Priscilla Lane, Irving, Tex. *10A-3*

Buchanan, Jr., Walter A., RFD #1, North Kenova, O. *58A-4*

BuChans, Jr., John A., 810 Coronado Ave., Coronado 18, Calif. *29S-4*

Bucholz, Leonard E., 6004 S. Talman, Chicago, Ill. *25A-1*

Buchter, Charles G., 156 Montecito Crescent, Walnut Creek, Calif. *12S-4*

Buck, James H., Lower Huntington Rd., Rt. 8, Ft. Wayne, Ind. *34A-1*

Buck, Paul C., Apt. A, 310 Garden Rd., Towson 4, Md. *42A-4*

Buckwalter, James L., 1020 Sirra St., Berkeley 7, Calif. *12S-4*

Budwine, John R., 3020 Las Palmas, Port Arthur, Texas *0A-1*

Buettell, Theodore D., Douglas Aircraft Co., 3000 Ocean Park Blvd., Santa Monica, Calif. *23S-4*

Buffa, Elwood S., School of Bus. Administration, Univ. of Calif., Los Angeles, Calif. *23S-4*

Buffum, Burbank B., 9001 W. 38th Ave., Wheatridge, Colo. *32S-3*

Buhr, Ronald K., R. R. #1, Box 501, Milford, Ohio *8AF-4*

Bull, Jack P. F., P. O. Box 271, Laconia, N. H. *63S-3*

Bull, Warren L., 531 N. Catherine, LaGrange Park, Ill *25A-1*

Bulla, Joseph R., 524 Overlook St., Greensboro, N. C. *21A-2*

Bullinger, Prof., Clarence E., Purdue Team, % Army Sec. Artillery School, APO 63, % PM, San Francisco, Calif. *0S-3*

Bullock, Geo. R., 4649 Beverly Blvd., Los Angeles 4, Calif. *23S-4*

Bunker, Arthur G., 96 Pinetree Ave., Parkwood, Savannah, Ga. *26A-1*

Burack, Steven I., 7508 Cromwell Dr., Clayton 5, Mo. *16A-1*

Burdett, Jr., Thomas S., % Div. Ind. Engr., Sylvania Elec. Inc., Emporium, Pa. *0A-1*

Burdick, James B., 19032 Bagnall St., Glendora, Calif. *23S-4*

Burdick, Richard L., The Maytag Co., 512 N. 4th Ave., W., Newton, Iowa *0S-3*

Burg, Harry J., 1263 Pratt Blvd., Chicago 26, Ill. *25A-1*

Burger, Eugene, 858 Palisade Ave., Yonkers, N. Y. *5A-2*

Burger, Robert G., 14841 Branham Lane, San Jose 24, Calif. *37A-1*

Burgess, Arthur E., 21 Mac Arthur Rd., Natick, Mass. *30A-2*

Burgess, Prof. A. R., Head, Dept of Ind Engr., A & M College of Tex., College Station, Tex. *22S-4*

Burk, Francis O., R. R. #2, Old Carpenter Rd., Edwardsville, Ill. *16S-3*

Burk, Robert G., 324 Carlisle Ave., Pittsburgh 29, Pa. *3A-1*

Burka, Wm. T., 1953 Bashford Manor Lane, Louisville 18, Ky. *18A-1*

Burkard, Carl J., 418 Whitney Ave., Pittsburgh 21, Pa. *3A-1*

Burke, C. H., 2615 Roanoke Ave., Dallas 19, Tex. *10S-3*
Burke, Charles H., 857 N. Dellrose, Wichita 6, Kansas *56A-2*
Burke, John G., 1842 W. 189th St., Homewood, Ill. *25S-4*
Burke, John J., 2304 Carson St., Redwood City, Calif. *12A-1*
Burke, Maurice W., 247 Ridgeway, Camas, Wash. *0A-1*
Burkett, Paul W., 1119 Olive Way, Apt. 203, Seattle 1, Wash. *20A-2*
Burkhardt, J. Robert, Standard Register Co. 626 Albany St., Dayton, Ohio *2A-2*
Burley, Donald B., R. D. #5, Graceland Rd., New Castle, Pa. *24A-1*
Burner, Jr., Rozelle E., 1749 Hampton Ave., Redwood City, Calif. *37S-4*
Burnes, Thomas F., 125 Jennie Dr., Pleasant Hill, Calif. *12AF-3*
Burnham, John W., The French Oil Mill Machinery Co., 1040 W. Green St., Piqua, O. *2S-4*
Burns, Ross J., 6144 Clayton St., Baton Rouge, La. *41A-1*
Burns, Wm. J., Houdaille Ind., Inc., 900 Ninth Ave., W., Huntington 4, W. Va. *58S-4*
Burrill, Clarence M., R. F. D. #1, Laconia, N. H. *63S-3*
Burrows, Jr., John G., 711 Woodland Dr., Pensacola, Fla. *33A-1*
Burrows, Maurice F., 245 Sequoia Ave., Walnut Creek, Calif. *12S-4*
Burton, James L., 823 W. 6th St., Marion, Ind. *35A-2*
Burton, John R., 1921, Camino DeLos Robles, Menlo Park, Calif. *12S-4*
Burton, Thomas A., 911 Bridge Rd., Apt. 2, Charleston, W. Va. *58A-2*
Burton, Wm. D., Rt. #1, Millington, Tenn. *28A-2*
Burtt, Howard V., 1624 Alomar St., Anaheim, Calif. *23A-1*
Busenbark, Wm. L., 4551 W. 5100 S., Kearns 18, Utah *50AF-4*
Bush, John C., 2113 Wychwood St., Toledo, O. *36S-3*
Bushong, Lee L., 308 Breaksper, Syracuse, N. Y. *13S-4*
Buss, Carl H., 446 E. 3rd St., Bloomsburg, Pa. *0A-1*
Butler, F. Anthony, 100 Memorial Dr., Cambridge 42, Mass. *30AF-4*
Butler, Robert E., 3318 Grandview Terr., Wichita 17, Kansas *56A-2*
Buto, Carl, 815 E. 205th, Euclid 19, O. *7AF-4*
Butterfield, Max A., Remington Rand Univac, Univac Park, St. Paul, Minn. *38S-4*
Buxton, James E., 421 Atlantic, N. E., Warren, O. *24A-1*
Buzby, Robert E., Apt. 30B, Brookline Manor Apts., Reading, Pa. *31A-2*
Byrne, J. Vaughan, 3602 Warren Rd., Cleveland 11, O. *7S-4*
Byrne, Raymond L., 1341 Southern Hills Blvd., Hamilton, O. *8S-4*
Byrnes, Albert L., 2567 N. Cramer, Milwaukee 11, Wisc. *45A-2*

Cabot, Ellsworth S., 1591 Dana Ave., Palo Alto, Calif. *37A-1*
Cady, Donald V., Rt. #3, Highland Dr., Morristown, Tenn. *11S-4*
Cagle, Wm. E., 1842 Cheshire Bridge Rd., N.E., Atlanta, Ga. *6A-2*
Cain, J. Paul, Armco Steel Corp., Middletown, O. *8S-4*
Cain, Richard F., Box 142, Magnolia, O. *19S-3*
Cain, Victor G., 920 Larch St., Inglewood, Calif. *23A-1*
Cairns, Douglas R., 1015 Herring Ave., W. Covina, Calif. *23A-1*
Claderone, Ralph A., 3004 S. Columbus St., Apt. C-1, Arlington 6, Va. *14A-2*
Caldwell, Kenneth S., Ernst & Ernst, 333 Montgomery St., Suite 800, San Francisco, Calif. *37S-4*
Caligiuri, Vincent A., Box 869, Tracy Rd., Walbridge, O. *36A-1*
Calkins, Charles C., 947 Gillespie Dr., Spring Valley, Calif. *29A-2*
Calkins, Harold A., 5840 St. Paul Ct., Oakland, Calif. *12S-4*
Calkins, Robert F., 9439 Newkirk Dr., Parma Hts. 30, O. *7S-4*
Callaway, Paul T., 3910 Briggs Ave., Apt. 4, Erie, Pa. *51A-2*
Callaway, Robert S., Corning Glass Works, Walnut St., Corning, N. Y. *48S-3*
Calvert, George M., 1556 Knuth Ave., Euclid, Ohio *7A-2*
Cambon, Geo. M., 1308 Kornblum Ave., Torrence, Calif. *23S-4*
Came, Frederick C., P. O. Box 570, Savannah, Ga. *26S-3*
Camp, Arthur W., 316 Anderson Rd., R. D. #3, Vestal, N. Y. *48A-1*
Campbell, Claude W., P. O. Box 84, Flossmoor, Ill. *25S-4*
Campbell, Daniel L., 516 Sunnyland Ave., Pittsburgh 27, Pa. *3A-1*
Campbell, Malcolm D., 14213 Parnell Ave., Riverdale 27, Ill. *25S-4*
Campbell, Robert H., 182 Monee Rd., Park Forest, Ill. *25A-1*
Campbell, Jr., Ruffner, 62 Orange St., Asheville, N. C. *0A-1*
Campbell, Thomas L., 3439 Kimberly Ave., Columbus 11, O. *1A-2*
Campbell, Wm. D., 2813 Hermitage Dr., Winston-Salem, N. C. *21A-2*
Cannon, Gilbert H., 1208 S. Armstrong St., Kokomo, Ind. *35AF-4*
Cannon, Joseph G., 4060 Redding Rd., N. E., Atlanta 19, Ga. *6A-2*
Cantrell, Henry L., 17 Linda St., Pensacola, Fla. *33A-1*
Canty, Daniel J., C. Brewer & Co., Ltd., P. O. Box 3470, Honolulu 1, Hawaii *0S-3*
Capitani, Raldo C., 2204 44th St., Rock Island, Ill. *46AF-4*
Caple, Wm. W., Parkview Memorial Hospital, 2200 Randalia Dr., Ft. Wayne, Ind. *34S-4*
Capretta, Joseph N., 68 Black Hawk Dr., Park Forest, Ill. *25A-1*
Caproni, Leo F., P. O. Box 1857, New Haven, Conn. *0S-3*
Carbon, Frank J., 989 Montford Rd., Cleveland Hts. 21, O. *7A-2*
Card, Robert E., 2714 Shippen Ave., Louisville 6, Ky. *18S-3*
Carenbauer, Wm. F., 235 Hazeleroft, New Castle, Pa. *24S-3*
Cariota, Peter J., 4599 Anderson Rd., So. Euclid 21, O. *7S-4*
Carl, Robert M., 2948 Escott, Toledo 14, O. *36A-1*
Carlile, Wm. K., 3448 Conrad Dr., Baton Rouge, La. *41AF-3*
Carlock, Robert C., 1525 Carolina Ave., Kingsport, Tenn. *17A-1*
Carlson, Eric A., 1119 S. Berry Rd., Webster Groves, Mo. *16S-3*
Carlson, E. Rolland, Automatic Voting Machine Corp., Jones & Gillford Ave., Jamestown 55, N. Y. *0AF-3*
Carlson, Frank R., 976 Georgia Ave., Macon, Ga. *55AF-3*
Carlson, John G., School of Bus. Administration, Univ. of Calif., Los Angeles 24, Calif. *23A-1*
Carlson, Raymond M., 36 Ward Ave., New Middletown, O. *24A-1*
Carlton, Cranfill A., 113 Edith, Irving, Tex. *10A-1*
Carmichael, Cecil S., 767 Kaumana Dr., Hilo, Hawaii *0S-3*
Carney, John W., 142 Oakdale Ave., Norristown, Pa. *31A-2*
Carolla, John A., 455 Claremont, Kenmore 23, N. Y. *49A-1*
Carpenter, Ford D., 9698 E. 21st St., Tulsa, Okla. *15S-3*
Carpenter, Wm. A., 7514 Kentucky, Dearborn, Mich. *47A-2*
Carr, Francis A., Hartford Special Machinery Co., Hartford 12, Conn. *0A-1*
Carr, James B., 506 Springhollow Rd., Circleville, O. *1A-2*
Carr, J. David, 141 Wolcott Dr., Youngstown 12, O. *24S-3*
Carr, Jr., J. Patrick, USS Prickett, DD 561, FPO San Francisco, Calif. *0S-3*
Carrabino, Joseph D., School of Bus. Administration, Univ. of Calif., Los Angeles 24, Calif. *23A-1*
Carrese, Angelo D., 295 Canton St., Tonawanda, N. Y. *49A-1*
Carrigan, John P., % Kimberly-Clark Corp., P. O. Box 4666, Memphis 7, Tenn. *28A-2*
Carrington, Wm. A., 362 High St., Hampton, N. H. *62A-2*
Carrocci, Larry M., 241 Buttles Ave., Columbus 8, O. *1A-2*
Carroll, Aldin J., 3441 E. Broad St., Columbus 13, O. *1A-2*
Carroll, Jr., Frank T., College of Engr., Louisiana State Univ., Baton Rouge, La. *41S-3*
Carroll, James J., 36 Saville Ave., Quincy 69, Mass. *30A-2*
Carroll, John M., 134 Pine St., Garden City, N. Y. *5A-4*
Carroll, Phil, 6 Crestwood Dr., Maplewood, N. J. *61S-4*
Carrott, John T., 1905 Berkley Ave., Ft. Wayne, Ind. *34A-1*
Carson, Gordon B., 2125 Elgin Rd., Columbus 21, O. *1S-4*
Carson, Lewis J., 5726 Southern Parkway, Louisville 14, Ky. *18A-1*
Carson, Jr., Robert G., Dept. of Ind. Engr., School of Engr., N. C. State College, Raleigh, N. C. *0S-3*
Carstarphen, Orrin H., 4014 Bloomfield Dr., Macon, Ga. *55A-1*
Carstens, Edward J., 66 Clearview Dr., Pittsford, N. Y. *44S-4*
Carter, Charles S., 1016 Chestnut St., Saginaw, Mich. *0A-1*
Carter, Donald E., 3110 Shadybrook, Wichita 14, Kansas *56A-2*
Carter, Edward F., Hammermill Paper Co., East Lake Rd., Erie, Pa. *51A-2*
Carter, Fred T., 2369 Jefferson Ave., Winston-Salem, N. C. *21A-2*
Carter, Gilbert B., 113 E. Franklin St., El Paso, Tex. *32S-3*
Carter, Paul E., 906 Eastman Rd., Oakwood Mkt., Apt. 10, Kingsport, Tenn. *17A-1*
Carter, Jr., Ross M., 2615 Persa, Houston, Tex. *22A-1*

Carter, Tod F., 128 W. Pennsylvania, San Diego 3, Calif. *29S-4*
Cartwright, Jr., Dana E., 623 Asbury Rd., Cincinnati 30, O. *8A-4*
Carty, Robert H., Continental Can Co., 100 E. 42nd St., N. Y., N. Y. *58-4*
Caruso, Vincent, Kaiser Aluminum & Chem. Co., Baton Rouge, La. *41A-1*
Carver, John J., 322 Denver, Dragerton, Utah *50S-4*
Casad, Arthur B., 224 San Miguel Way, San Mateo, Calif. *12S-4*
Case, Donald R., 1021 E. Central, Springfield, Mo. *0A-1*
Case, Wm. K., International Nickel Co., Inc., Huntington, W. Va. *58A-2*
Cashin, Bernard J., Scott & Williams, Inc., 266 Union Ave., Laconia, N. H. *63A-1*
Cashion, Carlos E., 805 48th St., W., Birmingham 8, Ala. *9A-2*
Cashion, James W., 2721 S. Hooker, Denver, Colo. *32A-1*
Cashman, Richard J., 2464 Palm Ave., Redwood City, Calif. *37A-1*
Cashman, Robert M., 4443 Youngstown Rd., S. E., Warren, O. *24A-1*
Cashton, Sidney, 6 Chatham St., Extension, Malden 48, Mass. *30S-4*
Casper, Donald M., 1991 Penfield Rd., Penfield, N. Y. *44A-2*
Cassel, Arno, 1049 Jackson St., Easton, Pa. *31A-2*
Cassel, Jean C., 18 W. Helena St., Dayton 5, O. *2A-2*
Castor, Joseph F., 1082 Harrow Rd., Franklin Square, N. Y. *5A-2*
Catanese, Samuel J., 712 Drexel St., Detroit 15, Mich. *47S-4*
Catlin, Harry S., 620 Lowell, Palo Alto, Calif. *12A-1*
Cauthen, Joe B., 803 Palmetto, Pasadena, Tex. *22A-1*
Cavanaugh, Vincent J., Ethicon, Inc. (Johnson & Johnson), Somerville, N. J. *61S-4*
Cavell, George R., 22516 Ridgeway Ave., Richton Park, Ill. *25A-1*
Cavendor, Marion N., 1869 Princeton, Little Rock, Ark. *0A-1*
Caveney, James J., 78 Burkham Ct., Elm Grove, Wheeling, W. Va. *0A-1*
Cawthon, 2/Lt., Don M., 201 Washington St., Marblehead, Mass. *0A-1*
Caywood, Thomas E., 704 Argyle Ave., Flossmoor, Ill. *25S-4*
Ceccanese, Geo. R., 6640 Allet Ave., Cincinnati 24, O. *8S-4*
Cecil, James W., 1320 23 Ave., Ct., East Moline, Ill. *46S-4*
Cecutti, John D., 341 N. Chesterfield Rd., Apt. #5, Columbus 9, O. *1A-4*
Ceppos, Kenneth S., 751 Walton Ave., Bronx 51, N. Y. *5A-2*
Cermak, Charles J., 620 Broad, N. W., Canton 8, O. *19AF-3*
Ceser, Richard G., 4302 W. 176th St., Torrance, Calif. *23AF-3*
Chaban, Albert, 11605 De Pue St., Philadelphia 16, Pa. *31A-4*
Chacko, Ittyera, (Private) Ltd., Readymoney Mansion, 43 Veer Nariman Rd., Bombay 1, India *48-S*
Chambers, Jr., Guy W., Apt. A, 4641 Eastway Ct., Columbus 13, O. *1A-2*
Chambers, Lawrence N., 3019 Jefferson, Davenport, Iowa *46S-4*
Chambers, V. Jack, 1723 Chelsea Dr., Anaheim, Calif. *23S-4*
Champion, Donald L., 2060 Palifox Dr., N. E., Atlanta 7, Ga. *6A-2*
Champion, Geo. P., 1111 Harvard Ave., Claremont, Calif. *23A-1*
Chandler, Geo. W., 821 Windermere, Drexel Hill, Pa. *51A-2*
Chane, Geo. W., Ernst & Ernst, 1600 Equitable Bldg., 120 Broadway, N. Y. 5, N. Y. *58-4*
Chapman, Jr., Dewey E., 530 S. Kenosha, P. O. Box 127, Tulsa, Okla. *15A-1*
Chappell, C. Donald, 1641 Indianapolis Blvd., Whiting, Ind. *53AF-3*
Chari, E. N., L6 67, Agrico Main Road, Jamshedpur, India *48-S*
Charlton, Robert L., c/o Allegheny Ludlum Steel, 1500 Jarvis, Ferndale 20, Mich. *47A-4*
Chartrand, Eugene J., 606 S. Citron, Anaheim, Calif. *23A-1*
Chase, Carl L., 1690 Metropolitan Ave., Bronx 62, N. Y. *5A-2*
Chase, John D., 3125 Buckingham Rd., Endwell, N. Y. *48A-1*
Chase, Joseph R., Scott & Williams, Inc., Laconia, N. H. *63A-1*
Chatto, Kenneth A., 1403 Shalleross Ave., Wilmington, Del. *31A-2*
Cheeley, Wm. E., 2500 S. Third St., Louisville, Ky. *18A-1*
Cheney, Thorndike F., 12 Labor In Vain Rd., Ipswich, Mass. *30S-4*
Cherner, Harold, 53 Rochester Rd., Newton 58, Mass. *30A-2*
Chester, C. Paul, 24502 Wimbledon Rd., Cleveland 22, O. *7S-4*
Chester, William M., The Heil Co., 3000 W. Montana St., Milwaukee 1, Wisc. *45S-4*
Chiavacci, Silvio A., R-1071 Wyoming Ave., Exeter, Pa. *0A-1*
Chick, Albert R., 172-34 82 Ave., Jamaica 32, N. Y. *5A-2*
Childress, Howard G., 122 S. Hickory, Sapulpa, Okla. *15A-1*
Childs, James, 1491 N. Morningside Dr., Atlanta, Ga. *6A-2*
Chilman, Arthur L., 3826 Olympiad Dr., Los Angeles 43, Calif. *23S-4*
Chinn, Victor L., 1015 Myrtle St., Oakland 20, Calif. *12A-1*
Chiotellis, Nick T., 634 E. 52nd St., Savannah, Ga. *26A-1*
Chipak, Robert F., 313 Loren Ave., Vestal, N. Y. *48S-3*
Chisholm, Harley A., 201 Chicopee Dr., Marietta, Ga. *6S-4*
Chock, Clinton, P. O. Box 148, Hakalau, Hawaii *0A-1*
Choudhury, Nirmalendu, Cross-road 18 Agrico, Jamshedpur, India *4A-S*
Christianson, John V., Lolita Dr., MR 97, Binghamton, N. Y. *48AF-3*
Chua, Richard O., 2150 Carolina St., Malate, Manila, Philippines *0A-1*
Chulik, Dimitri, 435 W. 23 St., N. Y. 11, N. Y. *5A-2*
Church, David P., 644 Blvd. East., Weehawken, N. J. *5S-4*
Churchill, Frank A., 506 Main St., Ligonier, Ind. *34A-1*
Churchill, Ralph O., 31 Greenridge Ave., White Plains, N. Y. *5AF-4*
Ciampa, Vincent A., 63 N. 6th St., Hudson, N. Y. *0A-1*
Ciolek, Chester H., 12911 Edmonton Ave., Cleveland, O. *7A-2*
Ciperson, Wm. L., 303 Beckwith Ave., Endwell, N. Y. *48S-3*
Cipriano, Charles R., 2911 S. Dinwiddie St., Apt. C-1, Arlington 6, Va. *14A-2*
Cisler, John P., 751 Krameria St., Denver 20, Colo. *32A-1*
Claeys, Marvin, United Air Lines, 5959 S. Cicero Ave., Chicago 38, Ill. *25S-4*
Clamp, Ronald, 8 Glenwood Ave., Methuen, Mass. *62S-4*
Clapham, Lawrence P., 6152 W. 74th St., Los Angeles 45, Calif. *23A-1*
Clark, Jr., Charles E., 9739 Longworth, Whittier, Calif. *23S-4*
Clark, Christopher T., 518 S. Main St., Niles, O. *24A-1*
Clark, Frederick H., 14 Walker Ave., Bradford, Pa. *49A-3*
Clark, Prof. Gerald E., c/o Clinton Joycox, Detroit Controls Corp. 5900 Trumble, Detroit, Mich. *47S-4*
Clark, Kenneth E., 312 W. Williams, Ft. Wayne 6, Ind. *34AF-3*
Clark, Lt., Lyle C., U. S. Naval Air Station, Willow Grove, Pa. *31A-4*
Clark, Merlin, Box 2527, Amarillo, Tex. *0A-1*
Clark, Norman C., 701 Mount Vernon Rd., Newark, O. *18-4*
Clark, Raymond W., 1212 Childers Dr., N. E., Albuquerque, N. M. *59AF-3*
Clark, Russell B., 3550 Washington, Gary, Ind. *53A-1*
Clark, Warren R., Townsend, Va. *42A-2*
Clarke, Clyde H., 33 St. John Ave., Binghamton, N. Y. *48A-1*
Clarke, Robert E., 456½ 11th St., Silvis, Ill. *46A-2*
Clarke, Jr., Wm. A., 782 Courtenay Dr., N. E., Atlanta 6, Ga. *6A-2*
Claugus, Harold W., 1151 Los Molinos Way, Sacramento 21, Calif. *43S-4*
Clauser, Ray A., Oley, Pa. *0A-1*
Clawson, Lester F., 5456 S. 2375 West St., Roy, Utah *50S-4*
Cleary, John W., 934 S. Toledo, Tulsa 12, Okla. *15A-1*
Clements, Robert C., 5049 Premier, Lakewood, Calif. *23A-1*
Click, Loring H., 3154 S. 67th Ct., Milwaukee, Wis. *45A-2*
Cline, Jr., Frederick A., 414 North Hills Ave., North Hills, Pa. *31S-4*
Cline, Robert L., Kerr-McGee Bldg., 306 N. Robinson, Okla. City, Okla. *57A-1*
Cloninger, James C., 5314 McCulloch Circle, Houston 19, Texas *22A-1*
Close, Floyd G., 3549 N. W. 24, Okla. City, Okla. *57S-3*
Cloud, Franklin H., P. O. Box 142, Western Springs, Ill. *25A-1*
Cloutier, Richard F., Apt. 204, 1809 Elliot Ave., Minneapolis 4, Minn. *62A-2*
Clow, Howard P., 623 N. 7th St., Burlington, Iowa *46S-4*
Cloyd, James G., 11600 S. Burley, Chicago, Ill. *25S-4*
Clune, B. Nevling, 918 Northern Life Tower, Seattle 1, Wash. *20S-4*
Clutton, Wm. F., #6 Yorkshire Ct., Knollwood Village, Circleville, O. *1A-2*

Coats, Roy R., 8347 Rosemead Rivera, Downey, Calif. *23A-1*
Cobb, Herbert E., P. O. Box 1437, Burlington, N. C. *21A-2*
Cobb, Jr., Wallis G., 213 B Donaldson St., Statesboro, Ga. *26A-1*
Coburn, Wm. R., 1006 Sunrise Dr., Whittier, Calif. *23A-1*
Cochran, Phillip S., 216 Taft St., Gary, Ind. *53S-3*
Cochran, Wm. B., 611 S.W. 135th, Seattle 66, Wash. *20A-2*
Cochran, Wm. M., Aluminum Co. of Amer., East State St., Lafayette, Ind. *35AF-4*
Cochrane, Emmett L., P. O. Box 6234, Murray Hill Station, Jacksonville, Fla. *27S-4*
Cocke, Jr., John H., 15220 Windemere, Wyandotte, Mich. *47A-2*
Codori, Richard C., 316 N. Stratton St., Gettysburg, Pa. *0A-1*
Coen, Cranston J., Office, Chief of Engrs., Management Div., Washington 25, D. C. *14S-4*
Coffin, John M., 10 Reyna Pl., Menlo Park, Calif. *37S-4*
Cohen, Arthur L., 144 N. Swall Dr., Los Angeles 48, Calif. *23A-1*
Cohen, Leon A., 41-20 46th St., Long Island City 4, N. Y. *5S-4*
Cohn, Burton R., 25 Lark Dr., Box 405, Woodbury, L. I., N. Y. *5A-2*
Cohn, M. Leonard, 255 W. 84th St., New York 24, N. Y. *5S-4*
Coia, John D., 1102 Borbeck St., Philadelphia, Pa. *31S-4*
Coker, Billy F., P. O. Box 831, Baytown, Texas. *22A-1*
Coker, Frederick T., 64 Tupper Drive, Stamford, Conn. *5S-4*
Coker, Ralph G., R #3, Gainesville, Ga. *0A-1*
Colburn, Alvin, 11525 Farndon, Mountain View, Calif. *37S-4*
Cole, Billy B., 112 Church St. N. E., Decatur, Ala. *0A-1*
Cole, Clement K., 721 S. Irolo, Los Angeles 5, Calif. *23S-4*
Cole, David E., 9 Roosevelt St., Corning, N. Y. *48AF-3*
Cole, Ens. Creswell C., 143 Isabella Ave., Atherton, Calif. *37A-1*
Cole, Marjorie C., 9 Rolling Rd., Rolling Park, Claymont 6, Del. *68S-3*
Cole, Wm. R. Jr., c/o Stahl Urban Co., Brookhaven, Miss. *0A-1*
Colegrove, Clell D., Deere & Co., 3300 River Dr., Moline, Ill. *56S-4*
Coleman, Daniel B., 10710 Santa Monica Blvd., Los Angeles 23, Calif. *23S-4*
Coleman, Edward P., 7111 D Alvern St., Los Angeles 45, Calif. *23S-4*
Coleman, John D., 5715 Free Pike, Dayton 5, Ohio *2S-4*
Coleman, John J. Jr., 1442 Bishop Lane, Louisville 18, Ky. *18A-1*
Coleman, Roy L. Jr., 3701 Overton Park, Ft. Worth, Texas *10A-1*
Colley, Donald G., 16 Court St., Boston, Mass. *30AF-4*
Collin, Elbert M., 8319 Virginia Circle, So., Minneapolis, Minn. *38A-2*
Collinge, Robert A., P. O. Box 153, Trion, Ga. *54A-1*
Collins, Charles J. Jr., 512 S. Church St., East Point, Ga. *6A-2*
Collins, Donald L., Delco Radio Div. of G.M., 700 East Firmin St., Kokomo, Ind. *35A-2*
Collins, Edward L., 1020 Madison Ave., Winston Salem, N. C. *21A-2*
Collins, Watson R., 1225 E. Orange St., Apt. D1, Lancaster, Pa. *0A-1*
Colman, Julius Jr., 3470 Syckelmoore, Trenton, Mich. *47A-2*
Colon, Ernesto F., Industrial Engineering, University of Puerto Rico, Mayaguez, Puerto Rico *0A-1*
Columbus, Ellis N., 6511 Yarmouth Ave., Reseda, Calif. *23A-1*
Colvard, Harold, 5412 E. 7th St., Tulsa, Okla. *15A-1*
ColVin, George L., 2711 Cullen Blvd., Houston, Texas *22A-1*
Combs, Earl R., 1751 Horton St., Seattle 44, Wash. *20A-2*
Combs, Stephen A., 367 Hillcrest Rd., York, Pa. *0A-3*
Compton, Joe E., 1518 Wooderest, Houston 18, Texas *22A-1*
Conant, Lawrence W., Granite City Steel Co., 20th & Madison Sts., Granite City, Ill. *16A-1*
Conaway, Ernest D., Jr., Robinson & Robinson, 600 Union Bldg., Charleston, W. Va. *58S-4*
Conley, Dennis L., Sheridan Road, Rt. #12, Ft. Wayne, Ind. *34A-1*
Connell, Robert H., 902 Sharon Drive, N.E., Jeffersonville, Ind. *18A-1*
Connell, William F., Gen. Del. Utica, N. Y. *0A-1*
Connors, William P., 214 Seaton Rd., Stamford, Conn. *5A-2*
Conrad, Edward L., Mead Johnson & Co., 2404 Pennsylvania St., Evansville 21, Ind. *18S-3*
Conrad, John F., Box 206, Van Wert, Ohio *0A-1*
Conton, Lee E., National Motor Bearing Co., National at Broadway, Redwood City, Calif. *37S-4*
Conway, Julius C., 220 McAlpine Drive, St. Louis 15, Mo. *16A-1*
Cook, Edward E., R #2, Williamsport, Md. *0A-1*
Cook, Edward W., 11802 Erwin, Cleveland 11, Ohio *7A-2*
Cook, Herman L., R #1, Clemmons, N. C. *21A-2*
Cook, James E., Hersey Mfg. Co., 381 "E" St. South, Boston, Mass. *30AF-4*
Cook, Walton Y., 164 W. Dixie Ave., Marietta, Ga. *6A-2*
Cook, Wendell R., 2021 Huntington Dr., Arlington, Texas *10A-1*
Cook, William S., 518 Chestnut St., Erie, Pa. *51A-2*
Coon, 2/Lt. C. Clifton Jr., 17th ATS, Charleston AFB, S. C. *0A-1*
Cooper, Floyd M. Jr., Old Spanish Trail, Milton, Fla. *33AF-3*
Cooper, Howard F., 1113 North Park, Shawnee, Oklahoma *57A-2*
Cooper, Merle L., 1118 West Drive, Port Neches, Texas *0S-3*
Cooper, R. Conrad, Vice President, Industrial Engineering, United States Steel Co., Pittsburgh 30, Pa. *3F-0*
Cooper, Raymond G., 1341 W. 10th St., Erie, Pa. *51A-2*
Cooper, Robert K., 1554 W. Coffman Ave., Casper, Wyo. *32A-3*
Cooper, Wilson D., 2616 W. 79th St., Kansas City, Mo. *0A-1*
Cooperrider, Durwood L., 28308 Lincoln Rd., Bay Village, Ohio *7S-4*
Cope, William S., American Enka Corp., Morristown, Tenn. *11S-4*
Copeland, George C., 707 S. Madison, Wichita, Kansas *56AF-4*
Copeland, George M., 2460 Valley View Dr., Rocky River 16, Ohio *7A-2*
Copp, Lowell J., Cincinnati Milling Machine Co., Cincinnati 9, O. *8S-4*
Coppage, John R. Jr., R #1, West Middlesex, Pa. *24A-1*
Corbett, John T. III, 3047 Carnes Ave., Memphis 11, Tenn. *28A-2*
Corbett, Rufus E. Jr., 2347-A Salem Court, Ardmore Terrace, Winston-Salem, N. C. *21A-2*
Cords, Edmond Jr., Remington Rand, 2601 Wilshire Blvd., Los Angeles, Calif. *23AF-3*
Corell, Robert W., 5170 Dewey Road, North Olmsted, Ohio *7A-2*
Cormack, Douglas S., 1842 Jefferson, San Francisco, Calif. *12A-1*
Cornelius, Ira E., P. O. Box 525, Inglewood, Calif. *23A-1*
Cornell, Arthur J., 107 Kingsway, Warner Robins, Ga. *55A-1*
Cornish, Miro, 2504 No. Central Ave., El Monte, Calif. *23S-4*
Cornstubble, Herman L., 730 W. Canterbury Rd., University City 24, Mo. *16AF-3*
Corvington, Jules, 1071 Mansfield Lucas Rd., Mansfield, Ohio *0S-3*
Cosme, Peter A., 2546 W. 109th Place, Chicago 43, Ill. *25S-4*
Costa, Vincent I., 18 Whittemore St., Medford, Mass. *30A-2*
Costanza, Robert R., 10020 S. Van Ness, Los Angeles 47, Calif. *23A-1*
Cote, Louis Joseph, 192 Sargeant St., Hartford 5, Conn. *0A-1*
Cote, Robert D., 834 Hill Ave., Glen Ellyn, Ill. *25S-4*
Cottingham, Jack E., 8650 S.W. Homewood Ave., Portland, 19 Ore. *0AF-3*
Cotton, Richard M., 1095 Stasia St., W. Englewood, N. J. *5A-2*
Coulbourn, Robert M. III, 616 W. 40th St., Baltimore 11, Md. *42A-2*
Coulter, Borden M., 127 Sinclair Ave., Glendale 6, Calif. *23S-4*
Counihan, Frank B., 21565 Hillard Rd., Cleveland 16, Ohio *7A-4*
Coutto, George J., Tata Locomotive and Engineering Co., Ltd., Jamshedpur 4, India *48-S*
CoVan, Jack P., R. #3, Box 10, Bryan, Texas *22S-4*
Coverdale, Hal M., Douglas Aircraft Co., 3000 Ocean Park Blvd., Santa Monica, Calif. *23S-4*
Covert, Maurice D., 1113 Cadle Ave., Mentor, Ohio *7S-4*
Cowan, Arnold A., 2755 Colby Ave., Los Angeles 64, Calif. *23S-4*
Cowan, Leonard W., 3620 Landfair Rd., Pasadena, Calif. *23A-1*
Cox, George D., R #1, Box 216, Chesterton, Ind. *53S-3*
Cox, Harry A., 10264 Michael Way, Cupertino, Calif. *37A-1*
Cox, John I. Jr., 2105 E. Sevier Av., Kingsport, Tenn. *17A-1*
Cox, John M., 22415 Kane, Detroit 23, Mich. *47S-4*
Coyne, Daniel L., 1625 University Ave., Bronx 53, New York *5A-2*
Craft, Carl B., 1310 Pinehurst Blvd., Sheffield, Ala. *0A-1*
Craig, Elbert B., 336 Lathrop Ave., Birmingham 9, Ala. *9A-2*
Craig, Robert B., Porcelain Metals Corp., 1400 S. 13th St., Louisville, Ky. *18S-3*
Craig, William H., 202 Bayless Ave., Florence, Ala. *9A-2*
Crandall, Max, 4009 Richton, Detroit 4, Mich. *47A-2*
Crane, Fred C., 5900 Revere Drive, Dallas, Texas *16S-3*

Crane, Roger R., Mgr. of Research, Mgmt. Sciences, Touche, Niven, Bailey & Smart, 1380 National Bank Bldg., Detroit 26, Mich. *47S-4*
Cranmer, Clyde E., 1917 E. Market St., Warren, Ohio *24S-3*
Crapo, James B., 8730 W. 3150 South, Magna, Utah *50A-2*
Cravens, Bill, East Maple St., Paris, Ark. *0A-1*
Crawford, D. G., 514 Woodland Drive, Huntington, W. Va. *58A-2*
Crawford, H. F., 664 Rozelle, Memphis, Tenn. *28S-4*
Crawford, Lyle D., 407 Alstair St., Pasadena, Texas *22A-1*
Crawford, Peter W., 173 Glentay Ave., Lansdowne, Pa. *31A-2*
Crawford, Thomas W., R #1, Lake City, Pa. *51S-4*
Crawley, Wayne O., R #1, Box 121, Ramona, Calif. *29S-4*
Crecca, John D. Jr., E. I. DuPont deNemours & Co., Belle Works, Belle, W. Va. *58A-2*
Creel, Joseph Sam, 3121 Highland Ave., So. #9, Birmingham 9, Ala. *9S-4*
Creslein, Wm. E. III, 1410 Little Bay Ave., Norfolk 3, Va. *0A-1*
Creveling, John H. Jr., Univ. of Calif., College of Engineering, Berkeley 4, Calif. *12A-1*
Cripe, Grayston M., General Electric Co., Bldg. 26-2, 1635 Broadway, Ft. Wayne, Ind. *34S-3*
Criss, Hubert O., 2637 Magill Ave., Maryville, Tenn. *11A-2*
Critzer, George E., % Reynolds Metal Co., Plant No. 12, Louisville, Ky. *18S-3*
Crock, Frank P., 3030 S. Colorado Blvd., Denver, Colo. *32S-3*
Crocker, Angus M., 3530 Melody Ave., Walnut Creek, Calif. *12S-4*
Croker, James F., 7507 Alexander Ave., Hammond, Ind. *53AF-3*
Cronin, Justin C., 30 Pine St., Whitinsville, Mass. *30A-2*
Crooks, Matt Levi Jr., 126 Ingersoll Ave. S. W., Knoxville, Tenn. *11A-2*
Crosby, Andrew C., 3425 Bellevue, Knoxville, Tenn. *11A-2*
Cross, Robert, R #3, Pottsville, Pa. *0A-1*
Crouch, Ray M., 3117 Old Orchard Rd., Garland, Texas *10S-3*
Crouse, Homer L., 1 Second St., Calumet, Mich. *0S-3*
Crow, E. T., 29018 Wolf Rd., Bay Village, Ohio *7S-4*
Crownover, Lewis S., Republic Steel Corp., Rm. 410, Market St., Youngstown 1, Ohio *24S-3*
Croysdale, W.E., 21026 Fairmont Blvd., Cleveland 13, Ohio *7S-4*
Crum, Glenn R., 312 Maryland Ave., Erie 2, Pa. *51A-2*
Csuri, Frank F., President Gardens, 8238 Tracy, Kansas City 10, Mo. *0A-3*
Cubbedge, Robert A., 3301 E. Lincolnshire, Toledo 6, Ohio *36S-3*
Culbertson, John M., 3429 Canal, Groves, Texas *0A-1*
Culp, Charles E., 7117 Booth Place, Ft. Worth, Texas *10A-1*
Cummings, Donald F., Box 111, Vanadium, N.M. *59A-1*
Cummings, Lincoln C., 33 Oak Hill St., Newton Center, Mass. *30A-2*
Cummings, Nelson J., 5441 Harmony Lane, Willoughby, Ohio *7A-2*
Cummings, Robert J., 1507 Spaulding Rd., Magnolia Park, Savannah, Ga. *2OS-3*
Cunningham, Edward L., 207 N. Boyd, Sapulpa, Okla. *15A-1*
Curran, William E., 3545 Judah St., San Francisco, Calif. *12S-4*
Curson, Harold R., P. O. Box 166, Louisville 18, Ky. *18A-1*
Curtis, Clyde F., 4923 Middledale, Lyndhurst 24, Ohio *7S-4*
Curtis, Joseph M., 17472 Norton Ave., Lakewood 7, Ohio *7S-4*
Curtis, Thomas J., Eitel McCullough Inc., 798 San Mateo Ave., San Bruno, Calif. *12AF-3*
Curtis, Wilson E., 402 S. Clay St., Troy, Ohio *2S-4*
Cushman, Lee H., Jr., 1306 Woodland St., Tullahoma, Tenn. *64S-3*
Cuturilo, George M., 2113 12th St., Akron 14, Ohio *52S-3*
Cyr, Col. Arthur R., Ordnance Corps U. S. Army, Rock Island Arsenal, Rock Island, Ill. *46S-4*
Czarnecki, John R., 1945 Hertel Ave., Buffalo 14, N. Y. *49A-1*

D'Acosta, Emil E., 3350 Creston Rd., Ft. Worth, Texas *10A-1*
D'Acosta, James L., Montes Urales 750, Mexico 10, D.F., Mexico *0A-3*
Daehling, Jack C., 1700 No. Waterman, Detroit 9, Mich. *47AF-4*
Dahin, John B., Stevens Fire Brick Co., P. O. Box 1284, Macon, Ga. *55A-1*
Dailey, George H., 1121 No. 7th St., Apt. 301., St. Louis 1, Mo. *16AF-3*
Dalen, M. Edward, 309 E. Elmwood, Apt. B, Burbank, Calif. *23S-4*
Dall, David G., 315 James Blvd., Signal Mountain, Tenn. *54S-3*
Dallas, John J., 108 Shelby Ave., Shelby, Ohio *0A-1*
Dame, Richard G., 719 Club Lane, Kirkwood 22, Mo. *16S-3*
Dammkoehler, Richard A., 32 Sunset Court, St. Louis, Mo. *16A-1*
Damroth, Michael, 465 Colfax Rd., Havertown, Pa. *31A-2*
Dandalides, John P., 307 Franklin Ave., Cuyahoga Falls, Ohio *52A-1*
Danek, James V., 408 Custer, Evanston, Ill. *25S-4*
Danford, D. H., 230 S.W. 30th Ave., Miami 35, Fla. *40A-1*
Daniel, Truman L., 9003 Matthew Ave. N.E., Albuquerque, N.M *59A-1*
Daniels, George M., 34 Second Ave., Auburn, N. Y. *0S-3*
Daniels, Jerry G., 3838 Nautilus Ave., Brooklyn 24, N. Y. *5S-4*
Daniels, William D., 518 W. Logan St., Moberly, Mo. *0A-1*
Dankowski, Thaddeus P., 130 Eckford St., Brooklyn 22, N. Y. *5A-2*
Dar, H. L., I.E. Dept., Tisco, Jamshedpur, India *4A-S*
D'Arcangelo, Edward J., Corning Glass Works, Walnut St., Corning, N. Y. *48A-1*
Dardwin, Louis J., 1581 Wittekind Terrace, Cincinnati 24, Ohio *8S-4*
Darragh, Ralph V., 1205 Concord Ave. N.E., Massillon, Ohio *19S-3*
Dashiell, David A., 507 Dallas Ave., Houston, Texas *22S-4*
Daugh, Harry C., 611 Way Bridge Rd., Toledo, Ohio *36S-3*
Daugherty, Raymond A., 1234 W. Russell Place, San Antonio 1, Texas *39AF-4*
Daum, Gustave A., 1002 Verda, Wichita, Kansas *56S-4*
Daum, Paul J., 366 Ocean View Ave., Berkeley, Calif. *12S-4*
Dautenhahn, Armin, 132 North Marion, Tulsa, Okla. *15A-1*
Davey, John, Jones & Laughlin Steel Corp., Cleveland Works Div., 3341 Jennings Rd., Cleveland 1, Ohio *7S-4*
David, Frank C., Roberts, Montana *0A-1*
David, Webster, DuPont Chambers Works, Penns Grove, N. J. *31A-2*
Davidson, Harold O. Jr., Operations Research Office, HQ. USAREUR, G3 Div., APO 403, % Postmaster, New York, N. Y. *0S-3*
Davidson, James T., 18203 Highland Dr., Maple Heights, Ohio *7A-2*
Davidson, Paul J., 9703 Chatfield, Houston 25, Texas *22A-1*
Davies, Ralph E., 2618 Garcia N.E., Albuquerque, N. M. *59A-1*
Davies, Walter G. Jr., 717 Mississippi Ave., Chattanooga, Tenn. *54A-1*
Davila, Gilbert K., Box 1713 University, Rio Piedras, Puerto Rico *0A-1*
Davis, Andrew J., Western Electric Co., Lexington Rd., Winston-Salem, N. C. *21A-2*
Davis, Bobbie G., 626 Kaufman, Waxahachie, Texas *0A-1*
Davis, Byron E., 257 Hayes Ave. N.E., Massillon, Ohio *19S-3*
Davis, Clifford, 20 Roanoke Rd., Berkeley 5, Calif. *12AF-3*
Davis, Donald J., 4310 Miami St., South Bend, Ind. *0A-1*
Davis, Duane A., 1851 Clayton Way, Concord, Calif. *12A-1*
Davis, Ford R., 1225 Detroit St., Napoleon, Ohio *36A-1*
Davis, George E. Jr., Edgar, Fla. *27A-2*
Davis, George G., 14 Curryer Rd., Middletown, Ohio *0S-3*
Davis, George Q., 31 Ames St., Cambridge, Mass. *30S-4*
Davis, Harry L., 55 Avondale Rd., Rochester 9, N. Y. *44S-4*
Davis, Hubert V. Jr., 1334 East Rock Springs Rd. N.E., Apt. #3, Atlanta 6, Ga. *6A-2*
Davis, James H., Aluminum Co. of Amer., Alcoa Bldg., Pittsburgh 19, Pa. *3A-3*
Davis, John, 1975 Titus Ave., Rochester 9, N. Y. *44A-2*
Davis, John D., International Business Machines, North St., Endicott, N. Y. *48A-1*
Davis, Louie H., 2900 N.W. 9th St., Miami, Fla. *40A-1*
Davis, Louis E., 665 San Luis Rd., Berkeley 7, Calif. *12S-4*
Davis, MacLean L., Gen. Elec. Co., A.G.T. Div., E.O.D. Dept., Assembly Time Standards Evendale, Sharonville, Ohio *8A-2*
Davis, Richard S., 2328 St. Mark's Way, Sacramento, Calif. *43A-2*
Davis, Robert, 3830 Briggs Ave., Erie, Pa. *51S-4*
Davis, Robert B., Box 403, Gulf Breeze, Fla. *0A-1*
Davis, Robert H. Jr., 3838 Boland Dr., Chamblee, Ga. *6A-2*

Davis, Tommy E., 2101 Skylark Dr., Arlington, Texas *10A-3*
Davis, William C., Kushins' Inc., 2nd & F. Sts., Santa Rosa, Calif. *37A-1*
Davis, William S., 764 E. Clark Place, Orange, N. J. *61A-2*
Davis, William V. Jr., 1953 Richwood Dr., Atlanta 19, Ga. *6A-2*
Dawley, Earl, 2464 Byrd Ave., Winston-Salem, N. C. *21A-2*
Dawson, Harold W., Middletown Rd., R #1, New Middletown, Ohio *24S-3*
Day, Carl B., 4236 Parkridge Dr. N.E., Atlanta 19, Ga. *6A-2*
Day, John B., School of Ind. Engr., Georgia Inst. of Technology, Atlanta, Ga. *6S-4*
Dayhuff, Fred J., Box 362, R #5, Crown Point, Ind. *53S-3*
Deacon, Oren K., National Supply Co., 3320 Bishop St., Toledo, Ohio *36A-1*
Deal, Charles L., 119 Dawn Dr., Box 313, Uniontown, Ohio *52A-1*
Dean, Hugh M., 1619 Jo Ann St., Oklahoma City 9, Okla. *57A-1*
Dean, Stuart M., 541 Ridge Rd., Middletown, Conn. *13A-2*
DeAngelis, F. V., 1266 Alameda dellas Pulgas, Redwood City, Calif. *37S-4*
Deaton, James R., 9112 Carlisle Ave., Baltimore 6, Md. *42A-4*
DeClue, Vincent C., 955 Long Pond Rd., Rochester 13, N. Y. *44A-2*
Deegan, J. Wayne, Engr. Bldg., State University of Iowa, Iowa City, Iowa *46S-4*
DeFelix, Hector J., 112 Clarington St., Rochester 9, N. Y. *44S-4*
DeForest, Elliott, Central Bldg., Seattle 4, Wash. *20S-4*
DeGarmo, Prof. E. Paul, 299 Grizzley Peak Blvd., Berkeley 8, Calif. *12S-4*
Degler, Alfred E., c/o Stromberg Carlson Co., Box 2449, 3235 Hancock St., San Diego 12, Calif. *29AF-4*
DeGraeve, Emil, 1273 N. Eastlyn Place, Pasadena, Calif. *23A-1*
DeHamel, Henry B., 2828 Cortelyou Place, Cincinnati 13, Ohio *8A-2*
Dehn, Leonard H., 6533 S. Whipple St., Chicago 29, Ill. *25A-1*
Deible, Newell W., 244 Hazelwood Ave. S.E., Warren, Ohio *24A-1*
DeJohn, Kenneth P., 595 Baldwin Ave., Sharon, Pa. *24S-3*
Delage, Paul M., Railroad Ave., Greenwich, Conn. *5A-2*
DeLappe, Robert D., 3832 East 88th, Seattle 15, Wash. *20AF-3*
Delle Donne, Frank P., 323 Preston Ave., Staten Island 12, N Y. *5A-2*
Delloff, Irving A., 5-18 Essex Place, Fair Lawn, N. J. *61S-4*
Del Rio, Jose L. Jr., Aceros Ecatepec, S.A., Paseo de la Reforma, #122 70 Piso, Mexico 1, D.F. *0A-1*
Demangate, Donald C., 15939 Index St., Granada Hills, Calif. *23A-1*
DeMars, A. J., Libbey Owens Ford Glass Co., 608 Madison Ave. Toledo 3, Ohio *36S-3*
Demetriou, James, 209 E. Auglaize St., Wapakoneta, Ohio
Dempsey, Patrick Joseph, 1619 N. Webster Ave., Dunmore, Pa. *0A-1*
Denari, Edward J., 1014 Lynda Lane, Arlington, Texas *10A-1*
Denenberg, Earle I., 75 Landing Park, Rochester 10, N. Y. *44A-2*
Denholm, Donald H., 720 Colebrook Dr., Webster Groves 19, Mo. *16S-3*
Denich, John, 18901 Fairville, Cleveland 11, Ohio *7S-4*
DeNinno, John L., 317 1/2 Omega St., Pittsburgh 6, Pa. *3A-1*
Denison, Everett W., 7320 Tiki Ave., Cincinnati 27, Ohio *8AF-4*
Denman, Dewey G., 1020 Franklin Ave., Pittsburgh 21, Pa. *3A-1*
Dennett, Hugh F., University of Arkansas, College of Engineering Fayetteville, Ark. *0S-3*
Denney, Richard W., 5418 Windswept, Houston 27, Texas *22S-4*
Dennis, William S., 35 Regester Ave., Baltimore 12, Md. *42A-2*
Dennler, Delvin A., 14 So. 52nd St., Belleville, Ill. *16A-1*
Derry, Stephen A., 509 Kentucky Home Life Bldg., Louisville, Ky. *14S-4*
Dersh, Lawrence A., 720 Ave. I., Brooklyn 30, N. Y. *5A-2*
DeSellem, John B., 1120 Rosedale Ave., Burlingame, Calif. *12S-4*
Detert, Robert C., 1049 DeKalb St., Gary, Ind. *53A-1*
Dettinger, Donald A., 3169 Cheltenham Rd., Toledo, Ohio *36A-1*
Deutch, William E., Morganite Inc., 33-02 48th Ave., Long Island City, New York *5S-4*
Devenish, Robert, 217 Springfield Pk., Wyoming, Cincinnati, Ohio *8A-4*
Devonald, Frank J., Tyaskin, Maryland *0A-1*
Devore, Dean L., 24237 Norfolk Ave., Detroit 19, Mich. *47A-2*
deVries, Hugh E., 3202 Bexley, Middletown, Ohio *0A-1*
Dewberry, Daniel A. Jr., 385 Picadilly Court, Concord, Calif. *12A-1*
DeWeese, Ellsworth H., 2021 Petaluma, Long Beach 15, Calif. *23A-1*
DeWolf, Anson B., 1255 N.W. 32nd St., Miami 42, Fla. *40AF-3*
DeWolf, John E. III, 2828 Pine Grove Ave., Chicago 13, Ill. *25A-1*
DeZego, John J., 6243 Marmaduke Ave., St. Louis 9, Mo. *16AF-3*
Dezelle, James Ray, 3575 Cromart Ct., So., Ft. Worth, Texas *10A-3*
Diana, Virgil J., 2200 Woodland Rd., Roslyn, Pa. *31A-4*
Dibner, David, 8 Powder Horn Hill, Wilton, Conn. *5A-2*
Dickason, Howard M., 5340 Temple City Blvd., Temple City, Calif. *23S-4*
Dickerson, William E., 2305 N. Winton Ave., Speedway, Indianapolis, Ind. *35A-4*
Dickert, Eddie J. Jr., 5th Ave., Winder, Ga. *0A-1*
Dickinson, Robert E., 3505 Blvd. of the Allies, Pittsburgh 13, Pa. *3A-1*
Dicks, Edward P., 1609 N. Oklahoma, Shawnee, Okla. *57A-2*
Dickson, LaRue W., Fisher Body Div.-Cleveland, (Coit Plant) East 140th & Coit Rd., Cleveland 10, Ohio *7S-4*
Dickson, Ralph S., 855 E. Smith, Kent, Wash. *20A-2*
Dickson, Ronald E., 1317 Lockwood Dr., Atlanta, Ga. *6A-2*
Dickson, William A., 116 Jefferson Park Dr., Huntington, W. Va. *58A-2*
Dicome, William O., 1135 Blandford Blvd., Redwood City, Calif. *37S-4*
Didion, Robert E., 1609 Sinclair St., Ft. Wayne 7, Ind. *34AF-3*
Diehl, Dean R., 1392 E. Broad St., Columbus 5, Ohio *1A-2*
Diehl, William L., 40 Rosecroft St., Rochester 16, N. Y. *44S-4*
Dietly, Robert K., 419 Mohawk Dr., Erie, Pa. *51S-4*
Differding, Charles, 2924 Florence St., Berkeley 5, Calif. *12A-1*
Diffin, Tracy A., 226 N. Seamarge Lane, Pensacola, Fla. *33AF-3*
Dighe, M. S., (Private) Ltd., Readymoney Mansion 43, Veer Nariman Rd., Bombay 1, India *48-S*
Dilday, Chester S., 1289 Wetsell Ave., Lancaster, Ohio *1A-2*
Diliberto, Frank J., Corning Glass Works, Corning, N. Y. *48AF-3*
Dilley, Donald B., United States Steel Corp., Gary Sheet & Tin Mill, Gary, Ind. *53S-3*
Dillman, Donald L., Crown, Cork & Seal, Inc., Eastern Ave. & Kresson St., Baltimore 3, Md. *42A-2*
Dimberg, Robert A., Allen Bradley Company, Industrial Engr. Dept., 136 W. Greenfield Ave., Milwaukee, Wisc. *46S-4*
Dimit, George, Flexonics Corp., Plant Industrial Engr., 2021 South Latham St., Memphis, Tenn. *28S-4*
Dimit, John H., 3325 Felician St., Ft. Wayne 4, Ind. *34S-3*
Dimmer, John C., Box 154, Lakeview, Wash. *20S-4*
Dinda, Robert, Industrial Engineering Dept., General Motors Institute, Flint 2, Mich. *0S-3*
Dineley, Edwin H., 9 Walnut Ave., Beverly, Mass. *30S-4*
Dinkelman, Robert H., 1466 Indianola Ave., Akron 5, Ohio *52A-1*
DiNubila, Armand A., 762 E. 19th St., San Bernardino, Calif. *0A-1*
DiNunzio, Ralph, 91 Pleasant St., Lexington, Mass. *30S-4*
DiPillo, Pasquale, J., 114 Danforth Ave., Paterson 1, N. J. *5A-2*
Dippo, Edwin A., 5963 Maplewood Rd., Mayfield Hgts. 24, Ohio *7AF-4*
Disanto, Arthur A., 28820 Foxboro Dr., Willowick, Ohio *7AF-4*
Dischinger, Robert J., 534 Walker Ave. E., Baltimore 12, Md. *42A-2*
deStefano, Mrs. S. John, 1342 Richardson Vista Rd., Apt. 362, Anchorage, Alaska *0A-1*
Dister, Richard Dean, 1143 Hempstead Dr., Cincinnati 31, Ohio *8A-2*
Ditch, William Clement, 205 Sixth Ave., Marion, Iowa *0A-1*
Dixon, Harvey L., 301 San Gabriel Court, Sierra Madre, Calif. *23A-1*
Doan, Roy S. Jr., 2400 So. Wolff, Denver, Colo. *32A-1*
Dobyns, Raoul S., 4117 Grim St., Waco, Texas *0S-3*
Dodds, David W., 15305 Parkgrove, Detroit 5, Mich. *47A-2*
Dodgson, Jack H., 134 S. Ash St., Hobart, Ind. *53S-3*
Dodson, Albert H., 1407 Glenwood Ave., Youngstown 11, Ohio *24A-1*
Dodson, Prentice M., 7313 Coronet St., Ft. Worth, Texas *10A-1*
Doherty, R. E., 8229 Wier Dr., Houston 17, Texas *22S-4*

Doll, Reginald S., 613 Paseo de los Reyes, Redondo Beach, Calif. *23A-1*

Dollard, Joseph S., 1904 Edmond-son Ave., Baltimore 28, Md. *42A-2*

Dolliver, Peter C., 1708 Euclid Ave., Berkeley 9, Calif. *12A-1*

Dombrowski, John R., 423 W. Fourth St., Nescopeck, Pa. *0A-1*

Donachy, Donald M., R #4, Sedgwick Rd., Waterford, Pa. *51AF-4*

Donigian, Michael M., 10 Main St., Netcong, N. J. *61A-2*

Donley, George A., 228 Martense St., Brooklyn 26, N. Y. *5A-2*

Donnell, William K., Lewis & Kaufman, Ltd., P. O. Box 337, Los Gatos, Calif. *37AF-3*

Donnelly, Robert E., R #1, Apalachin, N. Y. *48S-3*

Donnelly, William E., 136 West End Ave., Binghamton, N. Y. *48AF-3*

Donovan, Gene, Prudential Federal Savings & Loan Assoc., 125 South Main St., Salt Lake City, Utah *56S-4*

Doremus, Burton T. Jr., 50 Lewis Lane, Fair Haven, N. J. *0A-1*

Dorman, David A., 1007 Raisher, University City 24, Mo. *16A-1*

Dorn, Jerome, United Transformer Co., 150 Varick St., New York, N. Y. *5S-4*

Dorsett, Clyde H., 3020 Kenwood Ave., Hammond, Ind. *53A-1*

Dorsey, Harry A., 35 Saxon Rd., Worchester, Mass. *30S-4*

Dotts, Harold W. Jr., 600 Banbury Rd., Arlington Hgts, Ill. *35A-1*

Doty, Jack H., 511 North "E" St., Tacoma, Wash. *20S-4*

Doty, Raymond K., 1463 Sea Isle Rd., Memphis, Tenn. *28A-2*

Dougall, John B., Industrial Engr. Dept., Columbia Geneva Steel Div., Pittsburg, Calif. *12A-1*

Dougan, Francis A., 2045 E. 22nd St., National City, Calif. *29S-4*

Douglas, John F. Jr., R #3, Kingsport, Tenn. *17A-1*

Douglas, William H., Temco, Inc., 1003 Charolette Ave., Nashville, Tenn. *64A-1*

Dover, William T., 1765 Boulderview Lane S.E., Atlanta 16, Ga. *6A-2*

Dowler, Herbert K., 511 Thayer Ave., Ashtabula, Ohio *0A-3*

Dowling, W. Ernest, 354 Earl Ave., Oneida, N. Y. *13S-4*

Downen, Charles G., 930 Twining Pl., Webster Groves, Mo. *16S-3*

Downie, Harold F., 2806 Courtland Dr., Concord, Calif. *12A-1*

Downing, Daniel P., 9833 Niver Ave., Allen Park, Mich. *47A-4*

Downs, Raymond L. Jr., 198 Sierra Dr., Rochester 16, N. Y. *44A-2*

Doxer, Manuel, 230 E. Fariston Dr., Philadelphia 20, Pa. *31AF-4*

Doyle, Eugene S., Ass't Supt. Ind. Engineering, Kaiser Steel Corp, Fontana, Calif. *23S-4*

Doyle, Milton H., Sonotone Corp., 92 Main St., White Plains, N. Y. *5A-2*

Drake, Frank R., Anseo, 40 Charles St., Binghamton, N. Y. *48A-1*

Drakis, Walter J., 1601 W. Fifth Ave., Gary, Ind. *53S-3*

Draper, Prof. Charles R., 135 S. Park Dr., Stillwater, Okla. *57A-4*

Dreller, Richard J., Oscar Mayer Packing Co., 1337 W. 2nd St., Davenport, Iowa *46AF-4*

Drennan, James C., 3783 N. Drew Valley Rd, N.E., Atlanta 19, Ga. *6A-2*

Drennan, Robert H., 2800 S. Yates, Denver 19, Colo. *32A-1*

Dreshar, Henry A., 2128 Northland, Lakewood 7, Ohio *7S-4*

Drewery, David A., Harnischfeger Corp. 4400 W. National Ave., Milwaukee 46, Wisc. *45S-4*

Drui, Albert B., 7 Caldwell Ct., Ferguson 21, Mo. *16A-1*

Drum, Robert O., 1516 Hampton Rd., Rydal, Pa. *31A-2*

Drummey, John A., 729 Elm St., Ludlow, Ky. *8S-4*

Drummy, Thomas J., 12-30 157th St., Beechhurst, L. I., N. Y. *5S-4*

Dryja, Walter A., Box 186, Balboa Heights, Canal Zone *0S-3*

Dubost, Pierre, Societe De Prospection, Electrique, 42 Rue St. Paris 7, France *22A-1*

Dubuque, Charles G., Orangeburg Mfg. Co., Inc. Newark, Calif. *12AF-3*

Ducar, Theodore E., 307 St. James St., Box 341, Neosho, Mo. *0A-1*

Dudek, Richard A., 2-11-g Schenley Apts., Pittsburgh 13, Pa. *38S-3*

Duer, Roy J., United Machine Co., P. O. Box 7098, Ft. Worth, Texas *10A-1*

Duey, George R., 2608 2nd St., Lubbock, Texas *0A-1*

Duff, Dennis D., 319 Sylvester, Elmira, N. Y. *48A-1*

Duffield, James L., 2433 Villanueva, Mt. View, Calif. *37S-4*

Duffy, Daniel J., 44 W. 96th St., New York 25, N. Y. *5A-2*

Dugan, Leonard W., 6704 Sherwood Dr., Knoxville 19, Tenn. *11S-4*

Duggleby, William G. Jr., 2085 Northside Dr. N.W., Atlanta, Ga. *6A-2*

Dulack, Joseph T. Jr., 11 Field St., Chelmsford, Mass. *62A-2*

Dumore, Richard F., Bay State Abrasive Prod. Co., Union St., Westboro, Mass. *30A-2*

Duncan, Arthur, 328 No. Read Ave., Runnemede, N. J. *31S-4*

Duncan, James H., Standard Register Co., 2101 Livingston, Oakland 6, Calif. *12AF-3*

Dunham, Paul H., 355 Shelton Blvd., Eastlake, Ohio *7A-2*

Dunkle, Bernard E., 115 Jefferson St., New Iberia, La. *0A-1*

Dunlap, Clarence M. Jr., Industrial Engr. Dept., R. J. Reynolds Tobacco Co., Winston-Salem, N. C. *21S-4*

Dunlap, David L., R 7, Box 580, Olympia, Wash. *20S-4*

Dunlap, Harold G., H. P. Hood & Sons, 56 Roland St., Charlestown 29, Mass. *30S-4*

Dunmire, Paul G., 17 Channing, Burlingame, Calif. *12S-4*

Dunn, Allistair, 3320 Tall Oaks Dr., Brookfield, Wisc. *0S-3*

Dunn, Roy M., 2512 22nd Ave., Rock Island, Ill. *46S-4*

Dunne, John J., John Deere Plow Works, Moline, Ill. *46A-2*

Duntley, John M., 62 Meadow Lark Dr., Springfield, Ill. *0A-1*

DuPlessis, Bernard Louis Jr., 2/Lt. 04043072, 12th Labor Sup. Dist. APO 154, N. Y., N. Y. *0A-1*

dePlessis, Roger M., c/o R. A. Patrick, Bldg. 2, Rm. 217A, Electronics Park, Gen. Elec. Co., Syracuse, N. Y. *13A-2*

Du Pont, William W., R #1, Prattsburg, N. Y. *48A-1*

Duratti, Alfred J. Jr., 75 Crescent St., Swampscott, Mass. *0A-1*

Durbin, Harold C., 93 Holly Ave., Greenfield Village, Woodbury, N. J. *31A-2*

Durst, Sterling H., 4601 Almond Ave., Louisville, Ky. *18S-3*

Dushan, Robert, 10 Newman Rd., Malden, Mass. *30A-2*

Dutton, Robert P. Sr., 2651 Union Ave., Pennsauken, N. J. *31A-2*

Duty, Major Clifton O., 715 Evesham Ave., Baltimore, Md. *42A-4*

Duzyk, Edward F., 104 North Lee, New Castle, Pa. *24AF-3*

Dwyer, Jos. S., 1609 W. Capital Dr., Milwaukee 6, Wisc. *45S-4*

Dyer, Dickey, Tall Timbers, Carter Rd., Box No. 1258, R.D. #3, Princeton, N. J. *0S-3*

Dyke, Howard A., 75 Andover St., Lawrence, Mass. *62A-2*

Eady, Karl E., 6321/2 Cleveland St., Elyria, Ohio *7S-4*

Eager, Robert F., Aluminum Co. of America, Box 500, Lafayette, Ind. *35S-4*

Earle, Samuel W., Union Carbide & Carbon Corp., Management Services Dept., 30 E. 42nd St., New York 17, N. Y. *5S-4*

Easley, Kenneth E., 803 Westwood Dr., Clayton 5, Mo. *16A-1*

East, Woodrow D., R. #5, Butler, Pa. *3S-3*

Easterday, Robert J., R. #2, Knoxville, Tenn. *11A-2*

Eastman, Prof. Robert M., 55 East Dr., Columbia, Mo. *0A-3*

Eastwood, Ralph W., 608 Delaware Ave., Baltimore 21, Md. *42A-2*

Eaton, F. Wendell, 207 S. Barr St., Crawfordsville, Ind. *35A-2*

Eaton, James H. Jr., 242 Readwell Dr., San Antonio, Texas *39A-2*

Eaton, John C., R. #1, Spencer, Ohio *7A-2*

Eaton, Marvin A., St. Louis Car Co., 8000 N. Broadway, St. Louis 15, Mo. *16A-1*

Eaton, Paul T., 1451 Citadel Dr., Atlanta, Ga. *6S-4*

Eaton, Paul V. Jr., R. #1, Bradenton, Fla. *0A-1*

Ebeling, Charles W., 6129 Brookdale Blvd., Castro Valley, Calif. *12A-1*

Ebell, Edgar, 1730 Isabella St., Evanston, Ill. *25S-4*

Eberhard, Richard B., 1502 Hildreth Ave., Wheeling, W. Va. *0A-1*

Eby, Michael L., 12 Hilaire Dr., Huntington, N. Y. *5S-4*

Echt, Gilbert, 6316 W. Olympic, Apt. 21, Los Angeles, Calif. *23A-3*

Eddins, Billy J., 816 Russell Lane, Hurst, Texas *10A-1*

Edge, Harold L., 609 Byrne, Houston 9, Texas *22A-1*

Edgecumbe, Robert H., 350 S. Fuller, Los Angeles 36, Calif. *23S-4*

Ellis, Herbert S., 707 Jefferson St. N.E., Washington 11, D. C. *14S-4*

Edmonds, Robert M., Granite City Steel Co., Granite City, Ill. *16S-3*

Edmundson, Victor S., 2460 Arrowae Drive, Youngstown 11, Ohio *24S-3*
Edous, John R., 1401 Ocean Blvd., Long Beach, Calif. *23A-1*
Edson, Mark S. Jr., 1656 Garnet Lane, Concord, Calif. *12A-1*
Edwards, Clarence E., 4333 Saylor St., Dayton 6, Ohio *2A-2*
Edwards, David N., 415 Engineering Columbia Univ., New York 27, N. Y. *5A-4*
Edwards, Paul M., Edwards & Barnes, 2006 First National Bank Bldg., Pittsburgh 22, Pa. *3S-3*
Edwards, Robert C., Bausch & Lomb Optical Co., 635 St. Paul St., Rochester 2, N. Y. *44S-4*
Egan, Leo W., C/ Prod. Engr. Fact. Mezz "C", Pratt & Whitney Aircraft Div., U.A.C., East Hartford 8, Conn. *0AF-3*
Egan, William N., 3710 Bangor St. S.E., Washington 20, D. C. *14S-4*
Egger, Bernard E., 362 E. Beaumont Rd., Columbus 14, Ohio *1S-4*
Eggimann, Ervon J. H., 456 Birch Place, Westfield, N. J. *61A-2*
Egli, Richard A., 6800 Grant Ave., Cleveland 5, Ohio *7AF-4*
Eisen, Alan N., 136-18 35 Ave., Flushing, Queens 54, N. Y. *5A-2*
Elder, William F., 729 Coker Ave., Charleston, S. C. *0A-1*
Eldridge, Charles D., 3317 Linnet Rd., Louisville 13, Ky. *18S-3*
Eldridge, William B., 4834 Eastwood, Wichita 18, Kansas *56AF-4*
Elek, Joseph Martin, 4718 Dove Creek Way, Dallas, Texas *10A-1*
Eliason, Richmond D., 111 Kathleen Dr., West, Syosset, N. Y. *5S-4*
Elick, Joseph E., 115 Standish Ave. N.W., Massillon, Ohio *19A-1*
Ellett, Joel M., Jennings Ordinary, Va. *0A-1*
Elliott, Austin M., Lenkurt Electric Co. Inc., 1105 County Rd., San Carlos, Calif. *37S-4*
Elliott, Donald E., 8341 San Pablo Dr., Buena Park, Calif. *23S-4*
Elliott, Joseph M., 115 Searlight Dr., Ft. Bragg, N. C. *0A-1*
Elliott, Laurence E., 5458 Speir St., Savannah, Ga. *26A-1*
Ellis, Dan K., 1302 W. 20th, Wichita, 3, Kansas *56A-2*
Ellsworth, Robert T. Jr., 67 Kneeland Ave., Binghamton, N. Y. *4S-1*
Elrod, John T., Ind. Engr. Dept., University of Houston, Houston 4, Texas *22S-4*
Emens, Henry P., P. O. Box 462, Daingerfield, Texas *60A-2*
Emerson, C. Gordon, International Nickel Co., Huntington W. Va. *58A-2*
Emerson, Howard P., Prof. & Head Ind. Engr. Dept., 220 Perkins Hall, Univ. of Tenn., Knoxville, Tenn. *11S-4*
Emerson, James F., 911 Reilly Road, Wyoming 15, Ohio *8S-4*
Emes, Robert C., 1404 S. 28th St., Apt. 10, Arlington, Va. *14AF-4*
Emigh, Carl E., 239 Jackson St., No. Warren, Pa. *51A-2*
Emma, Charles K., 530 E. 90 St., New York 28, N. Y. *5A-2*
Emmert, Wilbur L., International Nickel Co., Huntington, W. Va. *58S-4*
Emmons, Phillips C., Orchard Hill, Chesapeake, Ohio *0A-1*
Enders, Harold O., 952 Watson Ave., Winston Salem, N. C. *21A-2*
Enell, John W., 497 Claremont Ave., Teaneck, N. J. *5S-4*
Engelmann, Sylvester A., 5216 S. Anthony Blvd., Ft. Wayne, Ind. *34A-1*
Engesser, Prof. Wm. F., Oregon State College, School of Engineering, Corvallis, Oregon *0S-3*
Engle, Arthur D., 1713 Dobson St., Evanston, Ill. *25S-4*
Engle, Ralph A., 12 Oak Brook Lane, Merrick, N. Y. *5S-4*
English, Jack B., 6730 E. 24th St., Tulsa, Okla. *15A-1*
English, Maurice A., 201 Falstaff Rd., East Syracuse, N. Y. *13A-2*
Engstrom, Harold, 105 Iden Ave., Pelham, N. Y. *5F-0*
Enyedy, Ralph F., R #2, Pine City, N. Y. *48A-1*
Enzor, Thomas H. Jr., C/ Management Div., Redstone Arsenal, Huntsville, Ala. *0A-1*
Erickson, John O., 8915 Mason Ave., Morton Grove, Ill. *25A-1*
Eriesson, Norman J., 189 Lorraine Ave., Mt. Vernon, N. Y. *5A-2*
Errington, Roger E., 11 Clinton Place, Utica, N. Y. *13A-2*
Eskenazi, Israel L., 472 S. White Station Rd., Memphis, Tenn. *28A-2*
Eskew, Robert E., Georgia Institute of Tech., Atlanta, Ga. *6A-2*
Eskilson, Jack E., 1948 Brown Rd., Overland 14, Mo. *16A-1*
Esselubn, Werner F., 616 N. Wyomissing Blvd., Wyomissing, Pa. *31A-2*
Esterly, William R., 4885 Redwood Dr. Lorain, Ohio *7A-2*
Etkin, Sidney, 3215 Bainbridge Ave., New York 67, N. Y. *5A-2*
Eubanks, Joe T. Jr., 1077 Atlantic, Memphis 12, Tenn. *28A-2*
Evans, Erman L., 2864 Shelley Dr., Baton Rouge, La. *41AF-3*
Evans, H. C., 7720 Airline Rd., Houston 9, Texas *22S-4*
Evans, I. E., 35 Elston Rd., Upper Montclair, N. J. *61A-2*
Evans, T. Blair, 304 E. David Rd., Dayton 9, Ohio *2S-4*
Evans, William D., 4039 S. 160th, Seattle 88, Wash. *20A-2*
Even, Arthur D., 64 Amherst, Pleasant Ridge, Mich. *47S-4*
Everest, David H. Sr., U. S. Steel Corp. 912 Salt Spring Rd., Youngstown 9, Ohio *24S-3*
Ewing, Gordon R., R. R. Donnelley & Sons Co., 350 E. 22nd St., Chicago 16, Ill. *25S-4*
Ewing, William M. Jr., Shenango Furnace Co., Sharpsville, Pa. *24S-3*
Exum, Robert Y., 241 N. LaPeer Drive, Beverly Hills, Calif. *23A-1*
Eyermann, Louis M., 3602 Lexington Rd., Louisville 7, Ky. *18S-3*

Fadavi, Morteza, Box 1094, McGill, Nev. *0A-1*
Fader, Seymour, 456 E. 30th St., Paterson 4, N. J. *5A-2*
Fahlbeck, Dale D., 112 E. 4th St., Berwick, Pa. *0AF-3*
Fahrney, Byron W., 1519 Mamaroneck Ave., White Plains, N. Y. *5S-4*
Fairman, Robert L. 2160 Oak St., Jacksonville, Fla. *27A-2*
Fairservice, Thomas G., 322 Doyleson Ave., Endwell, N. Y. *4S-1*
Falconer, Ralph, M.R. 97, 4 Barry Way, Binghamton, N. Y. *4S-3*
Falkner, Charles H., Westinghouse Educational Dept., Brinston & Ardmore Blvd., Wilkinsburg, Pa. *3A-1*
Fang, Tao Yao, Gass Processes Division, The Girdler Co., Louisville 1, Ky. *18S-3*
Faris, Lary L., 7352 Reading Rd., Apt. 2, Cincinnati 37, Ohio *8A-2*
Farkas, Richard P., American Standard, 40 W. 40th St., New York 18, N. Y. *5A-2*
Farley, Leon C., 3824 No. Drexel St., Oklahoma City 12, Okla. *57AF-3*
Farmer, Chauncey G., 511 Colonial Dr., Wilmington, N. C. *0A-1*
Farmer, Fred F., 630 Pennsylvania Ave., Jackson, Miss. *0A-1*
Farnbacher, John M., 2515 Lynn Ave., Dayton 6, Ohio *2S-4*
Farnsworth, Eldridge W., 1800 Taylor Ave., Seattle 9, Wash. *20S-4*
Farr, Donald E., 2102 Charnwood Ave., Los Angeles 32, Calif. *23A-1*
Farr, Meredith B., P. O. Box 156, Lowland, Tenn. *11A-2*
Farrell, James Y., 818 Rex Blvd., N.W., Warren, Ohio *24A-1*
Farrell, John W. Jr., 29 Summerhill St., Stoneham, Mass. *30A-2*
Farrington, Earl E., 5511 Allenwood Ave., Parma 29, Ohio *7S-4*
Farynyk, Daniel, Enjay Co. Inc., 11 S. Portage Path, Akron, Ohio *52A-1*
Fash, Robert F., 86 Wellington Ave., Short Hills, N. J. *5A-2*
Faulkner, Leslie E., 2023 Ferndale, Dallas 24, Texas *10A-1*
Fauntleroy, Dort, 421 E. Lincoln Ave., Belvidere, Ill. *0A-1*
Faust, John E., 1504 Carolina Ave., Kingsport, Tenn. *17A-1*
Feeney, John F., 63 Second St., Medford, 55, Mass. *30A-2*
Fein, Harris A., 245-11 62nd Ave., Douglaston 62, N. Y. *5S-4*
Fein, Mitchell, 202 Saddlewood Dr., Hillsdale, N. J. *5S-4*
Feisel, Mason D., 909 Amsden Blvd., Fremont, Ohio *36AF-3*
Felder, Sanford F., 934 Peckman St., Akron 20, Ohio *52A-1*
Feldman, Louis, Office of the Chief Ind. Engr., P. O. Dept. Washington, D. C. *14A-2*
Feldmann, Howard U., 2525 S. Sandusky, Tulsa, Okla. *15A-1*
Feleki, Elmer E., 1524 Vista Trail, N.E., Atlanta, Ga. *6A-2*
Felley, Harry A., Reed Mfg. Co., 1425 W. 8th St., Erie, Pa. *51A-2*
Felts, M. Richard, 2003 Fairhaven Circle, N.E., Atlanta, Ga. *6S-4*
Fenner, Dean L., 4190 White Bear Ave., White Bear Lake 10, Minn. *38A-2*
Feorene, Orlando J., 95 Upland Dr., Rochester 17, N. Y. *44S-4*
Ferguson, Charles R., 11122 Lanewood Circle, Dallas Texas *10S-3*
Ferguson, C. Quinton, R. #1, Box 386, Norfolk, Va. *0S-3*
Ferguson, George, 34 Fenwick Ave., St. Louis 21, Mo. *16A-3*
Ferguson, Starling V., R #1, Box 300, Gardendale, Ala. *9A-2*
Ferguson, William M., 4730 Reed St., Ft. Wayne, Ind. *34A-1*
Fernandez, Manuel A., 2210 Gerald Dr. Apt. 3, Louisville 18, Ky. *18A-1*

Ferreira, Sergio C., 198 Rua Domingos, Ferreira, Copacabana, Rio de Janeiro, Brazil *0A-1*

Ferrell, Thornton R. Jr., 109 White Oaks Dr., Rochester 16, N Y.. *44S-4*

Ferriter, William S., Rockwell Mfg. Co., Nordstrom Valvd Div., 2431 Peralta St., Oakland, Calif. *12A-1*

Ferst, Alvin M. Jr., Rich's Inc., Broad & Alabama Sts., Atlanta, Ga. *6S-4*

Feuerpfeil, Wolfgang G., Giddings & Lewis Mach. Tool Co., 142 Doty St., Fond du Lac, Wisc. *45S-4*

Fialkov, Herman, 251-14 71 Ave., Bellerose 26, N. Y. *5A-2*

Field, James L., Vanity Fair Mills, Inc., Monroe Mills, Monroeville, Ala. *33S-3*

Field, R. Anthony, R. #2, Stanley, N. Y. *44S-4*

Fields, Paul William, 56 Heiskell Ave., Wheeling, W. Va. *0A-3*

Figh, Lewis H. Jr., 2476 LeRuth Ave., Montgomery 6, Ala. *0A-1*

Fil, Joseph F., 22405 Dieriex Ct., Mt. View, Calif. *37A-1*

Filimon, Victor D., % Iranian Oil Refining Co., Abadan, South Iran *7S-4*

Filsinger, Alfred C., 145 Linden St., Rochester 20, N. Y. *44A-2*

Filson, Rogers C., Phillips Petroleum Co., Bartlesville, Okla. *6A-1*

Fine, Leonard H., 2505 Downing Dr., Cincinnati 8, Ohio *8S-4*

Fink, Norman S., 321 S. Robertson Blvd., Beverly Hills, Calif. *23S-4*

Fiori, Remo M., 2955 Lurting Ave., Bronx 69, N. Y. *5A-2*

Fish, Edwards R., Jr., R. #2, Box 5191, Issaquah, Wash. *20S-4*

Fisher, Carl F., 1436 Buena Vista Dr., Huntington, W. Va. *58A-2*

Fisher, J. William, 36 W. High Terrace, Rochester 11, N. Y. *44A-2*

Fisher, Michael C., 4203 E. 12th Place, Gary, Ind. *53A-1*

Fisher, Othel A., 386 E. Main, Geneva, Ohio *7A-2*

Fisher, Roy J., 47 Downey Dr., Tenafly, N. J. *8S-4*

Fisher, Warren H., 5591 Green Acres Court, Cincinnati 11, Ohio *8AF-4*

Fishman, Donald D., 41 Evelyn, Mattapan 26, Mass. *30A-2*

Fishman, William, 3512 Federal Ave., Los Angeles 66, Calif. *23A-1*

Fiske, Gordon L., 279 Rye Rd., Rochester 13, N. Y. *44S-4*

Fissinger, Richard M., 758 Hayes, Gary, Ind. *53S-3*

Fitzgerald, A. E., 640 Laurel St., Baton Rouge, La *41A-1*

Fitzgerald, William J., 1037 Calhoun Way, Stockton, Calif. *12A-1*

Fitzwilson, R. E., Chief Ind. Engr., Lockheed Aircraft Corp., Dept. 13-01, Marietta, Ga. *6S-4*

Fix, Ralph F., 552 E. Warner Rd., Akron 19, Ohio *52A-1*

Flame, Lowell, 2630 Kingsbridge Terrace, New York 63, N. Y. *5A-2*

Flanagan, Thomas J. Jr., 203 Vanida Dr., R #1, Camillus, N. Y. *13A-2*

Flanders, Daniel E., 4933 Lubback Ave., Ft. Worth, Texas *10A-1*

Flatow, Paul L., 456 Riverside Dr., New York 27, N. Y. *5S-4*

Fleming, Hugh J., Production Mgr., A.C. Lawrence Leather Co., Sawyer St., Peabody, Mass. *30S-4*

Fleming, John H., R #1, Franklin, Pa. *0A-3*

Fleshler, Maurice, Dixie Cup Co., Easton, Pa. *0A-1*

Fletcher, Leonard James Jr., Bradley Univ., College of Engr., Peoria, Ill. *0A-1*

Fletcher, Thomas J., 61 Patrick Ave., Maryville, Tenn. *11S-4*

Flewelling, George B., Lenkurt Electric Co., 1105 County Rd., San Carlos, Calif. *37A-1*

Flexner, Gerald, 907 E. Slocum St., Philadelphia 19, Pa. *31A-2*

Florance, William E., 502 Marwood Rd., Rochester 12, N. Y. *44A-2*

Florentine, Joseph H., 212 Timber Terrace, Arlington, Texas *10S-3*

Floriani, Joseph D., 2007 St. Elmo, N.E., Canton, Ohio *19S-3*

Floyd, Linton E., III, Gen. Elec. Co. Mfg. Eng., Broadcast Equip. Bldg. #7, Rm. 152 Electronics Park, Syracuse, N. Y. *13A-2*

Floyd, William S. Jr., 14 Lenox Way, San Francisco 27, Calif. *12A-1*

Fodo, Joseph A., 4172 Ridge Rd., Cleveland 9, Ohio *7A-2*

Foehringer, Harry J., 20000 Beachview Drive, Cleveland 17, Ohio *7S-4*

Foerst, John Edward, 1775 Harrodsburg Rd., Lexington, Ky. *0A-3*

Fogarty, George P., 216 Belford Ave., Huntington 1, W. Va. *58AF-4*

Fogel, Herman M., E.I. duPont de Nemours & Co., Savannah River Plant, Aiken, S. C. *0S-3*

Fong, Phyllis A., Avenida 7aB, TI-62, Apartamento 12, Panama, Republica de Panama *0A-1*

Forberg, Richard A., Proctor & Gamble Co., M.A. & R., Bldg., Cincinnati 17, Ohio *8A-2*

Forcum, William R., P. O. Box 5, Casper, Wyo. *32A-1*

Ford, Ellsworth W., 728 Windsor Court, Neosho, Mo. *23A-1*

Forni, Jay Summer, 67 Claremont Ave., Orinda, Calif. *12A-1*

Forry, James W., 10446 Deerfield Rd., Cincinnati 41, Ohio *8A-2*

Forssell, Leroy E., 10101 Rhodes Ave., Chicago 28, Ill. *25S-4*

Forsythe, Thomas G., 1118 Bellflower S.W., Canton 10, Ohio *19A-1*

Forte, Raymond R. Jr., Central Engineering Dept., American Optical Co., Southbridge, Mass. *30S-4*

Fortgang, Milton, 92 Linden Blvd., Hicksville, N. Y. *5A-2*

Foss, Oliver A., 1636 S. Beverly Glen, Los Angeles 24, Calif. *23A-1*

Foster, Dennis P., 26 Reese St., Elberton, Ga. *0A-1*

Foster, Donald G., 8839 Wood Brook, Dallas, Texas *10A-1*

Foster, Theodore C., 216 Willow St., Mansfield, Mass. *0A-1*

Foster, Thomas E., 697 College St., Macon, Ga. *55A-1*

Foster, Vernon D., 3010 So. Columbus St., Arlington 6, Va. *14A-4*

Fournet, Dewey J. Jr., 4934 Inniswold Rd., Baton Rouge, La. *41A-1*

Fowler, James F., Falk Corp., 3001 W. Canal St., Milwaukee 8, Wisc. *45A-2*

Fox, Allan J., 1633 Bayram Dr., Houston 24, Texas *22S-4*

Fox, Joseph M., Merck, Sharp & Dohme, Div. of Merck & Co., Inc., 640 N. Broad St., Philadelphia 30, Pa. *31S-4*

Fox, L. O. Jr., Box 1000, Narrows, Va. *0S-3*

Fox, Richard C., 111 Rockland Dr., No. Syracuse, N. Y. *13A-2*

Fox, Richard K., 3907 39th S.W., Seattle 6, Wash. *20A-2*

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Frank, Elias, 2845 Bainbridge Ave., Bronx 58, N. Y. *5A-2*

Frank, Harry E. Jr., 255 Wyandotte Rd., Fairless Hills, Pa. *31A-4*

Frankel, Robert A., 434 E. 52 St., New York 22, N. Y. *5A-2*

Frankenstein, Gordon A., 18 Beatty St., Canton, Mass. *30A-2*

Franklin, Mark, 4427 Iowa St., San Diego 16, Calif. *29A-2*

Franz, Doyle E., 1045 So. Line St., Decatur, Ind. *34A-1*

Franz, Roy C., 644 Main St., Bre[illegible]ler, Pa. *0A-3*

Franzson, Everett W., 1 Maroon Rd., Levittown, Pa. *31S-4*

Frazee, Thomas W., 128 E. 31st, Tulsa, Okla. *15A-1*

Frederick, Howard E., 20943 Brighton Ave., Torrance, Calif. *23S-4*

Frederick, Roger H., 3733 A. Winthrop Ave., Fort Worth, Texas *10A-1*

Freed, Dean W., Brush Electronics Co., 3405 Perkins, Cleveland 14, O. *7S-4*

Freedman, Rudolph, Alco Valve Co., 865 Kingsland, St. Louis 5, Mo. *16S-3*

Freeman, Alfred E., 851 Kenwick Rd., Columbus 9, Ohio *1A-2*

Freeman, George J., 411 W. Duncannon Ave., Philadelphia 20, Pa. *31S-4*

Freeman, John R., P. O. 314, Corning, N. Y. *48A-1*

Freeman, John Robert, 3824 Vanette Lane, Dallas 16, Texas *10A-1*

Freeman, Richard D., 467 Meadowbrook Ave., Warren, Ohio *24A-1*

Freeman, Rodney W., 521½ 44th St., West Palm Beach, Fla. *0A-1*

Freet, Joseph L., 12724 8th S.W., Seattle, Wash. *20A-2*

French, Clayton M., 2870 So. Yates, Denver 19, Colo. *32A-1*

French, James T., 2540 Sharondale Dr. N.E., Atlanta 5, Ga. *6A-2*

Fresen, George H., Gen. Elec. Co., Supv. Time Standards Overhaul, Column K9, Bldg. A., Cincinnati, Ohio *8A-2*

Frey, Harvey H., 46 Belmont St., Rochester 20, N. Y. *44A-2*

Frey, Robert W., 1814 31st N.W., Canton, Ohio *19A-1*

Freyermuth, Russell D., 2710 Los Arboles Place, N.E., Albuquerque, N. M. *59A-1*
Freytag, David L., 75 Hall Ave., Newark, Ohio *18-4*
Friedenthal, Hans L., 20300 Enadia Way, Canoga Park, Calif. *23A-1*
Friedlander, Walter H., Research Div., Curtiss-Wright Corp., Quehanna, Pa. *08-3*
Friedman, Harold E., % 5853 Phillips Ave., Squirrel Hill, Pittsburgh, Pa. *3A-1*
Friedman, Melvin W., 98 Osborne Path, Newton Center 59, Mass. *30A-2*
Friedman, Paul H., 1115 Dartmouth St., High Point, N. C. *21A-2*
Friedman, Sherman, 122 Madison Ave., Hartford 6, Conn. *0A-1*
Friedrichs, Albert L., 4262 Prescott Rd., Baton Rouge, La *41A-1*
Friend, Albert W., General Electric ANP Dept., Evendale 15, Ohio *8AF-4*
Frisk, John D., 4201 E. Harvard Ave., Denver 20, Colo. *32A-1*
Frizzell, Earl M. Jr., 86 E. 4th No., Springville, Utah. *50A-2*
Fromm, Frank H. Jr., 4215 State Rd., Drexel Hill, Pa. *31S-4*
Frost, John R., 131 Baldwin Ave., Crockett, Calif. *12S-4*
Fruchter, Marvin S., 66-40 108th St., Forest Hills, N. Y. *5A-2*
Fry, Henry W., 600 College Ave., Boulder, Colo. *32A-1*
Fry, James C., 2623 E. Wesley Terr., Apt. 9, Atlanta 5, Ga. *6A-2*
Frye, Robert G., 60 W. 57 St., Hialeah, Fla. *40A-1*
Fryer, Alton D. Jr., 5130 Shirley Ave., Jacksonville, Fla. *27S-4*
Fulbright, John G., 1043 E. 65th St., Inglewood 3, Calif. *23A-1*
Fulford, Robert O., Schenley Distillers, Inc., Lawrenceburg, Ind. *0A-1*
Fullaway, Robert W., 5756 Capetown St., Long Beach 11, Calif. *23S-4*
Fuller, Chester L., 240 N. Ashland Ave., Cameron Can Machinery Co., Chicago 7, Ill. *25A-1*
Fuller, Don W., 511 Forum, Louisville 14, Ky. *18S-3*
Fuller, Ernest M. 5007 E. 3rd, Tulsa 12, Okla. *15S-3*
Fuller, Lloyd E., 2530 Wyoming Blvd. N.E., Albuquerque, N. M. *59S-3*
Fuller, William S., 2097 Springhill Dr., Columbus 21, Ohio *1A-2*
Fulton, John Fewell, 3618 Cornell Blvd., Winston-Salem, N. C. *21A-2*
Fulton, Paul N., Cascade Research Corp., 53 Victory Lane, Los Gatos, Calif. *37A-1*
Funtik, George, 341 Central, Inkster, Mich. *47A-2*
Furbacher, John H., 21559 Military, Dearborn 8, Mich. *47S-4*
Furlong, Roland D., Box 267, Mathews, Va. *0S-3*
Furry, E. G., 400 Meadowharen, Wichita, Kansas *56S-4*
Furst, Harold, 790 Keeler Ave., Berkeley 8, Calif. *12S-4*
Fusillo, Frank, 5340 Mary Ann Lane, Gary, Ind. *53A-1*
Futterman, Nathan, 2080 Barnes Ave., Bronx 62, N. Y. *5S-4*
Fyler, Walter A., Babson Park, Fla. *0A-1*

Gabocy, Theodore J., 1702 E. 84th, Chicago, Ill. *25A-3*
Gaensslen, Philip, Thompson Products Inc., 23555 Euclid Ave., Cleveland 17, Ohio *7S-4*
Gaffney, Bernard J., Mavrakos Candy Co., 4711 Delmar Blvd., St. Louis 8, Mo. *16A-1*
Gaines, Craig T., 4814 George St., Wichita Falls, Texas *0A-1*
Gaffney, John J., 10 Strathmore Ave., Devon, Conn. *5S-4*
Galbraith, Oliver III, 5688 Montezuma Rd., San Diego, Calif. *29A-2*
Galey, James M., 4414 Tupelo St., Baton Rouge, La. *41A-1*
Gallagher, Robert C., 2047 Craig St., Winston-Salem, N. C. *21A-2*
Gallaher, David G., 204 West Market St., Clearfield, Pa. *0A-1*
Galloway, Bruce Vincent, 29 Oak St., Rome, Ga. *0A-1*
Gally, David L., % Murray Sales Co., 16 Wazee Market, Denver, Colo. *32A-1*
Gamble, Laurin E., 133 Fawcett Ave., N.W., Canton 8, Ohio *19S-3*
Gambrell, Prof. C. B. Jr., 142 W. State St., W. Lafayette, Ind. *35A-2*
Gangemi, Robert A., 208 S. Roxford Rd., Syracuse, N. Y. *13A-2*
Gangloff, Harold C., R #1, Box 956, Durham, Calif. *0A-1*
Ganzi, Richard L., 33 Overlook Rd., Ardsley, N. Y. *5A-2*
Garard, James A., R. R. Donnelley & Sons Co., Crawfordsville, Ind. *35A-2*
Garard, James H. Jr., 2198 N. 4th St., Columbus 1, Ohio *1A-4*
Gardner, Dwight D., 3143 Redding Rd., Columbus 21, Ohio *1S-4*
Garmon, John R., 80 Huguenot Ave., Apt. 11-B, Englewood, N. J. *5A-2*
Garretson, Edwin H., 50 Audubon, Rochester 10, N. Y. *44S-4*
Garrett, Marvin S., 3113 Osprey, Louisville 13, Ky. *18S-3*
Garthoff, Stanley D., 401 Hermleigh Rd., Silver Spring, Md. *14A-2*
Garthwaite, David S., Cavo Dr., R #3, Poughkeepsie, N. Y. *0A-1*
Garvey, John J., American Steel & Wire, 4300 E. 49 St., Cleveland 5, O. *7A-2*
Garwood, Jack H., 568 Jackson St., Gary Ind. *53A-1*
Garza, Juan, R #1, Box 31-B, Rockdale, Texas *0A-1*
Gasper, Samuel J., 2733 S. 60th Ct., Cicero 50, Ill. *25AF-3*
Gasperovich, Anthony L., 1812-11th St., Moline, Ill. *46A-2*
Gasser, Sidney B., 1808 Dakota N.E., Albuquerque, N.M. *59A-1*
Gauthier, Gerard A., 23627 Hudson, Dearborn, Mich. *47S-4*
Gavett, Joseph W., School of Mech. Engr., Cornell Univ., Ithaca, N. Y. *48A-1*
Gavin, Edward K., 334 Lancashire Rd., St. Louis 15, Mo. *16A-1*
Gay, Donald M., 3975 S. Orange Blossom Trail, Orlando, Fla. *0A-1*
Gayle, Walter Gregory, % Line Material Co., 1700 Vanderbilt Rd., Birmingham, Ala. *9A-2*
Gayley, David T., Arch Drive, Prospect Park, Emporium, Pa. *0A-1*
Geertson, Charles A., Erie Resistor Corp., 644 W. 12th St., Erie, Pa. *51AF-4*
Geier, August F., 10404 Mill Rd., Mt. Healthy, Ohio *8AF-4*
Geiger, Edwin R., 1000 Portola Dr., Arcadia, Calif. *23A-1*
Geisel, Charles E., 8100 Rockwood Dr., St. Louis 23, Mo. *16A-1*
Geller, Gerald, 828 N. Garden Terr., Macon, Ga. *55S-3*
Geller, Harry, 217 E. Mount Eden Ave., Bronx 57, N. Y. *5A-2*
Genzlinger, Bryce S., Asst. Prof. in Ind. Engr., Syracuse Univ., Syracuse 10, N. Y. *13A-2*
George, Arthur K., 483 Veda Ave., Danville, Calif. *12S-4*
George, Harold W., 380 N. Mountain Ave., Upper Montclair, N. J. *61S-4*
George, Robert James, 2804 Cumberland, Wichita Falls, Texas *0A-1*
Georgia, Edward J., 3315 Waverly St., Palo Alto, Calif. *37A-1*
Georgopulo, George B., 360 Riverside Dr., New York 25, N. Y. *5A-2*
Gerbig, George Van, 903 Dickinson St., Memphis 7, Tenn. *28S-4*
Gerdes, James R., 1644 W. Addison St., Chicago 13, Ill. *25A-1*
Gergus, Raymond G., 60 Woodward, Sausalito, Calif. *0A-1*
Gerrard, Clarence C., 12706 E. Blossey, Spokane 65, Wash. *0A-1*
Gery, Ralph C., Eli Lilly & Co., Indianapolis 6, Ind. *35S-4*
Gessaman, Cooper H., Standard Register Co., 626 Albany St., Dayton, O. *2A-2*
Getz, Frank R., 234 Main St., P.O. Box 542, Short Beach, Conn. *0A-1*
Getz, Ralph E., 117 W. Monument Ave., Dayton 2, Ohio *2A-2*
Getzler, Philip, 151 Norfolk St., New York 2, N. Y. *5A-2*
Gewirtz, Morris, 222 Penn St., Brooklyn 11, N. Y. *5AF-4*
Gewurtz, Gustav, Penn Ventilator Co., Goodman & Allegheny Ave., Philadelphia 40, Pa. *31A-2*
Geyer, Elwood W., 905 N. Geneva St., Glendale 7, Calif. *23S-4*
Geyer, Frank T., 187 Garden Rd., Columbus 14, Ohio *1S-4*
Geyer, Herbert, 8113 Paso Robles, Van Nuys, Calif. *23AF-3*
Giacomo, Donald G., 1145 Cedar Ave., Provo, Utah *50A-2*
Giambalvo, Edward, R #1, New Palestine, Ind. *0A-3*
Giardina, Vincent J., 8652 Williams Ave., Philadelphia 50, Pa. *31A-2*
Gibbs, George W., 1219 Meadowview Dr., Miamisburg, Ohio *2S-4*
Gibbs, Lloyd M., % Continental Can Co. Inc., 265 W. Trigg, Memphis 6, Tenn. *28S-4*
Gibson, Jerry V., 5124 E. 24th, Tulsa, Okla. *15S-3*
Gibson, Maurice E. Jr., 28 B. Miller Ave., Fairborn, Ohio *2A-2*
Gibson, William, Kennecott Copper Co., Div. Ind. Engr., McGill, Nev. *0A-1*
Gifford, Daniel A., 2625 Pine St., Waukegan, Ill. *25A-1*
Gilbert, Robert P., 709 Grove St., Birmingham 9, Alabama *9A-2*
Gilbreth, Dr. Lillian, 30 The Crescent, Montclair, N. J. *5F-0*
Gilfeather, Frank A., R #8, Box 665, Ft. Worth, Texas *10S-3*
Gill, John K., 335 Lincoln Ave., Mt. Gilead, Ohio *1A-2*
Gillespie, John A., Demorest, Ga. *0A-1*

Gillespie, Joseph W., 1075 James St., Springfield, Ohio *28-4*
Gillett, Robert S., Whippoorwill Hollow, Ijamsville, Md. *14A-2*
Gillette, Leroy O., R #1, Elizabethtown, Pa. *68-3*
Gilliland, Jim H., Simpson Logging Co., Shelton, Wash. *20S-4*
Gilpin, John W., 1275 San Raymundo, San Mateo, Calif. *12S-4*
Gilson, Kenneth G. Jr., 509 Ridgewood Ave., Glen Ridge, N. J. *5A-2*
Gimple, Warren E., 1707 Sherwood Lane, Nashville 6, Tenn. *64A-1*
Ginay, Emil G., 4811 Euclid Ave., East Chicago, Ind. *53A-1*
Ginder, Grove R., U. S. Steel Corp., Gary Steel Works, #1 North Broadway, Gary, Ind. *53S-3*
Ginn, Harry W., 806 Wilson Ave., Tullahoma, Tenn. *64S-3*
Gintert, Dean W., R #3, Cortland, Ohio *24S-3*
Giovanini, Frank, 4737 Laura Dr., Concord, Calif. *12S-4*
Giovanoni, Richard L., 3 Sycamore St., Brockton, Mass. *30A-2*
Giovinazzo, Dominic, 203 N. Scioto St., Circleville, Ohio *1A-4*
Gittler, Harvey, 745 Farmington, West Hartford, Conn. *6A-1*
Gladu, Robert L., 68 Hollis St., Manchester, N. H. *62A-2*
Glass, Robert S., 1833 Rosemont Dr., Ft. Wayne, Ind. *34A-1*
Gobat, Fred R., R #11, Lafayette, Ind. *35A-2*
Goelz, Robert C., % Kaiser Aluminum & Chem. Corp., 1924 Broadway, Oakland 12, Calif. *12AF-3*
Goetting, Clifford S., 623 S. Milton Ave., Whittier, Calif. *23A-1*
Goheen, Gerald H., 19481 Bentler, Detroit 19, Mich. *47A-4*
Golab, Edward J., 4922 S. Kolin Ave., Chicago 32, Ill. *25A-1*
Golay, Faber, 10623 Deerfield Rd., Cincinnati 41, Ohio *8A-4*
Gold, Solomon W., 2309 E. 24th St., Brooklyn 29, N. Y. *5S-4*
Goldberg, Max, R #7, Kalamazoo, Mich. *6A-1*
Goldberg, Samuel W., Seneca Sales Corp., 701 Seneca St., Buffalo 10, N. Y. *49AF-3*
Goldenberg, Arthur P., 1383 Panther Rd., Rydal, Pa. *31A-2*
Goldman, Jay, Washington Univ., Dept. of Ind. Engr., St. Louis, Mo. *16S-3*
Goldman, Jerome M., 240 Cleveland, Gary, Ind. *53A-1*
Goldman, Lawrence, 24 Admiral, Buffalo 16, N. Y. *49A-1*
Goldsby, Arthur F., P.O. Box 51, Reeds Ferry, N. H. *63A-1*
Goldstein, Daniel A., 129 Lowell St., Peabody, Mass. *6A-1*
Goldstein, Samuel, 5319 Kalein Dr., Culver City, Calif. *23A-1*
Goldstein, Sanford M., 146 W. Como, Columbus, Ohio *1A-2*
Goldstein, Stanley E., 125 Marcy Pl., New York 52, N. Y. *5A-2*
Goldsworthy, Bertis A., 746 E. 560 North, Provo, Utah *50S-4*
Golf, George P., 2025 Beach St., San Francisco 23, Calif. *37A-1*
Goll, Miles E., 119 Forest Ave., Dayton 5, Ohio *28-4*
Gollender, Morton, 2630 Piedmont Ave., Berkeley, Calif. *12A-1*
Gollong, Paul B. W., 1018 N. State St., Chicago 10, Ill. *25S-4*
Golub, David H., 6648 Washington, University City 5, Mo. *16A-1*
Golubin, Nicholas M., P. O. Box 591, Ravenswood, W. Va. *1A-2*
Gomberg, Dr. William, Prof. of Ind. Engr., Washington University, St. Louis, Mo. *16S-3*
Gomes, Norman V., 7063 Glen Meadows Lane, Cincinnati 37, Ohio *8S-4*
Gongaware, Lemuel J., 818 Concord, S.W., Canton, Ohio *19A-1*
Good, Ralph L., 1501 N. Center St., Shawnee, Okla. *57A-2*
Goodall, Arthur L., Cpl. Project, Systems Test Div., White Sands Proving Ground, N. M. *59A-1*
Goode, Prof. Henry P., Dept. of Ind. Engr., Southern Methodist Univ., Dallas 5, Texas *10S-3*
Gooderham, Carleton W. Jr., 3424 Simmons St., Oakland 19, Calif. *12A-1*
Goodman, Marvin K., R #10, Kingsport, Tenn. *17A-1*
Goodman, Paul W., 1845 Whipple Rd. N.W., Canton, Ohio *19S-3*
Goodman, Roger M., 237 Hillside Ave., White Plains, N. Y. *5A-2*
Goodson, James M. Jr., 556 Forest Dr. So., Birmingham, Ala. *9A-2*
Goodwin, Herbert F., Room 52-561, Mass. Inst. Of Tech., Cambridge, Mass. *30S-4*
Goolsby, William W., 925 Rosedale St., Kingston, Tenn. *11A-2*
Gordon, Billie, Kaiser Aluminum & Chem. Corp., Box 1031, Baton Rouge, La. *41A-1*
Gordon, Simeon E., 97-12 103 Ave., Ozone Park 17, N. Y. *5A-2*
Gorr, John J., 1401 32nd Ave. S.W., Apt. 5, Miami 25, Fla. *40A-1*
Gotlieb, David, 6953 Merrill Ave., Chicago 15, Ill. *25A-1*
Gotterer, Malcolm H., Harvard Business School, Soldiers Field, Boston 63, Mass. *30A-2*
Gottesman, Maxwell, 14240 Dickens St., Sherman Oaks, Calif. *23A-1*
Gottschalk, Robert G., 115 Peachtree Rd., Penfield, N. Y. *44A-2*
Gould, Arthur F., 821 Magnolia Rd., Hellertown, Pa. *68-3*
Gould, Elmer H. Jr., Code 149, Mare Island Naval Shipyard, Vallejo, Calif. *12S-4*
Gould, Joseph, 98 Hornby Dr., Painted Post, N. Y. *48A-1*
Gould, Philetus S., Mgr. Admin. Engr., Goodyear Tire & Rubber Co., Akron, Ohio *7S-4*
Gower, John W., 28 N. Wilkinson St., Dayton 2, Ohio *2S-4*
Grabowski, George A., 1002 Sawyer Rd., Toledo 7, Ohio *36AF-3*
Grabowski, John S., 5614 N. Mason Ave., Chicago 30, Ill. *25A-1*
Grabstein, Norman E., 240 Gellert Dr., San Francisco 27, Calif. *12S-4*
Graddy, Wendell B., 932 McKellar Dr., Tullahoma, Tenn. *64A-1*
Grado, John Jr., Fitchburg Paper Co., Fitchburg, Mass. *6A-1*
Grady, Robert L., Campbell Soup Co., 43rd & Franklin Blvd., Sacramento, Calif. *43AF-4*
Grady, R. Paul, 1222 23rd St., Portsmouth, Ohio *6S-3*
Graff, Vernon F., 3416 26th N.W., Canton, Ohio *19A-1*
Graham, Arthur S. Jr., 118 8th Ave., Brooklyn 15, N. Y. *5S-4*
Graham, Ben S., R #2, Tipp City, Ohio *2S-4*
Graham, George W., 533 Read Ave., Runnemede, N. J. *31S-4*
Graham, John H., Service Pipe Line Co., Box 1979, Tulsa, Okla. *15A-1*
Graham, William E., 396 N. 21st, San Jose, Calif. *37A-1*
Grams, Stanley, 2927 Marconi Ave., Apt. 2, Sacramento 21, Calif. *43A-2*
Grandi, Mario M., 719 N. Hawthorne St., Anaheim, Calif. *23S-4*
Grandjean, Ronald F., 253 Lawn Ave. S.E., Canton 6, Ohio *19AF-3*
Granger, Harvey Jr., P.O. Box 1150, Savannah, Ga. *26A-1*
Grant, Earl C., 1711 N. Carroll, Dallas, Texas *10A-1*
Grant, Homer H. Jr., Head. Dept. Ind. Engr., University of So. Calif., Los Angeles 7, Calif. *23S-4*
Gratz, Jack Jr., 2821 Jefferson Ave., Winston Salem, N. C. *21A-2*
Gravis, Christo P., 1276 Crestwood Circle, Bountiful, Utah *50A-2*
Gray, Henry T., 428 Haverford Rd., Wynnewood, Pa. *31S-4*
Gray, Waldo H., Wyandotte Chemical Corp., Wyandotte, Mich. *47S-4*
Graybeal, Bernard B., Jr., 2326 Ardmore Terrace, Winston Salem, N. C. *21A-2*
Grayson, George A., Box 662, McGill, Nev. *6A-1*
Grayson, Walter, 112 Decker St., Valley Stream, N. Y. *5A-2*
Greanoff, Charles S., 15011 Hilliard Rd., Lakewood 7, Ohio *7S-4*
Greaves, Robert G., 1527 N. Austin Blvd., Chicago 51, Ill. *25S-4*
Greaves, Robert O., 5916 E. 24th, Tulsa, Okla. *15A-1*
Green, Clarence, 218 Sunset Lane, Munster, Ind. *53A-1*
Green, David N., A. B. Chance Co., 210 N. Allen St., Centralia, Mo. *16S-3*
Green, Donald R., 500 Lamont Dr., Dayton, Ohio *2A-2*
Green, Francis E., Jr., Eureka Specialty Printing Co., 530 Electric St., Scranton, Pa. *6S-3*
Green, I. Jay, 384 W. First St., Dayton 2, Ohio *2S-4*
Green, Stanley, 2021 S. 16, East, Salt Lake City, Utah *50A-2*
Green, William F., 5362 Chickasaw Rd., Memphis 17, Tenn. *28A-2*
Greenberg, Irwin, 150-16 87 Rd., Jamaica, N. Y. *5A-2*
Greene, Charles R. Jr., 212 Oak Dr., Lake Jackson, Texas *22S-4*
Greene, Dan S., 1062 Solana Dr., Mountain View, Calif. *37A-1*
Greene, Gordon Wm., 12 Lakeview Rd., Foxboro, Mass. *30A-2*
Greene, James H., Dept. of Gen. Engr., Purdue Univ., Lafayette, Ind. *35A-2*
Greene, Louis, 700 Santandar Ave., Coral Gables, Fla. *40S-3*
Greenglass, Bert, 2317 Mott Ave., Far Rockaway, N. Y. *5A-2*
Greenstone, Henry D., 395 Ft. Washington Ave., New York 33, N. Y. *5A-2*
Greenwood, Frances C., 1367 Barrows Rd., Oakland 10, Calif. *12S-4*
Greenwood, George B., 3652 Brookgroves Ave., Grove City, Ohio *1A-2*
Greenwood, Orrin J., R #2, Tullahoma, Tenn. *64S-3*
Greer, Austin L., 143 Tuxedo Parkway, Newark, N. J. *5S-4*
Greer, Howard S., 170 Fifth St., Fords, N. J. *5A-2*
Greer, Thornton C., 5308 Shady River Rd., Houston 27, Texas *22A-1*

Gregory, Joseph F., 3938 Forest Highlands Dr., Chattanooga, Tenn. *54A-1*
Greig, Rowed A., c/o Orinoco Mining Co., Apartado No. 3, Ciudad Bolivar, Venezuela, S.A. *68-3*
Greiner, Howard G., The Jeffery Mfg. Co., 1st Ave. & 4th St., Columbus, Ohio *1A-2*
Greller, Nelson P., Nelson P. Greller & Assoc., 2800 Allendale Pl. N.W., Washington 8, D. C. *14S-4*
Grelson, Clarence O., 3623 Harriet Ave. So., Minneapolis, Minn. *38AF-4*
Grendel, Edward J., 4507 Telhurst Rd., So. Euclid 21, Ohio *7A-2*
Greschel, Charles H., 924 Ramona Ave., Albany 6, Calif. *12A-1*
Grider, Donald W., #1 Tuscaloosa, Atherton, Calif. *37A-1*
Griebel, Richard H., 3705 Kirkwood Dr., Ft. Wayne 3, Ind. *34S-3*
Griffin, Charles E., 214 Grandview N.W., Canton 8, Ohio *19S-3*
Griffin, Harold W., Gilmanton, N. H. *63AF-3*
Griffin, Marvin A., 4012 Dogwood Lane, Chattanooga, Tenn. *54A-1*
Griffin, Norman E., 7241 So. Timberlane Dr., Madeira, Ohio *8S-4*
Griffith, Howard P., 14232 12th S.W., Seattle 66, Wash. *20A-2*
Griffith, John E., Jones & Laughlin Steel Corp., #3 Gateway Center, Pittsburgh 30, Pa. *3S-3*
Griffith, Norris A., Box 186, Perkins, Okla. *57A-1*
Griffith, Kenneth, Abbott Laboratories, 14th & Sheridan Rd., North Chicago, Ill. *25A-1*
Griffiths, Robert L., 2511 Fourteenth St., Cuyahoga Falls, Ohio *52A-1*
Griffiths, William D., 2027 Towhee, N. Augusta, S. C. *6A-1*
Grigsby, James O., Kingsport Press, Inc., Press & Roller St., Kingsport, Tenn. *17A-1*
Grimes, I. Roger, Booz, Allen & Hamilton, Rm. 445, 550 S. Flower St., Los Angeles, Calif. *23S-4*
Grimes, William B., R #1, Lynnview Dr., Mason, Ohio *8S-4*
Grinberg, Paul I. Jr., 130 E. 59th St., New York 22, N. Y. *5A-2*
Grinnell, Warren D., Adding Mch. Div. of N.C.R. Co., S. Aurora St., Ithaca, N. Y. *48S-3*
Grodemange, Herbert, Jr., 305 West "J", No. Little Rock, Ark. *6A-1*
Groelinger, Herbert J., Ramo Wooldridge Corp., Computer Systems Div., 5730 Arbor Vitae St., Los Angeles 45, Calif. *23A-1*
Groenke, James F., 508 W. 7th St., North Canton, Ohio *19S-3*
Groseclose, Frank F., 2129 Brookvally Lane, N.E., Atlanta, Ga. *6F-6*
Groth, Quentin N., Beaver Creek, Heath Rd., Chesterland, Ohio *7S-4*
Grottle, Lt. Col. George T., 186 B, North AIA, Patrick AFB, Fla. *6A-1*
Grout, Gardner K., 2240 Chaucer Rd, San Marino, Calif. *23A-1*
Gruber, Foster M., 10535 Ashton Ave., Los Angeles 24, Calif. *23S-4*
Grudzien, Walter J., 22 Laurel St., Waterbury, Conn. *5A-2*
Grundmann, Gordon A., 6948 Delmar, University City 5, Mo. *16A-1*
Grunenthal, Frederick W., 86 Mineola Ave., Point Lookout, L. I., N. Y. *5A-2*
Gryna, Frank M. Jr., University College, Rutgers University, New Brunswick, N. J. *5S-4*
Guaelides, James K., 518 Floyd St., Englewood Cliffs, N. J. *5A-2*
Guard, Raymond J., Aluminum Co. of America, Alcoa, E. State St., Lafayette, Ind. *35A-2*
Guarino, Roger C., Arma Corp., Dept. 591, Roosevelt Field, Garden City, L. I., N. Y. *5A-2*
Guelcher, Robert B., 1040 Grace St., Erie, Pa. *51S-4*
Guenthner, John V., 4029 Lambert Ave., Louisville 18, Ky. *18A-1*
Guffin, Willie S. Jr., 30 Spence Ave., N.E., Atlanta, Ga. *6A-2*
Guinther, Karl C., 666 N. Riverside, St. Clair, Mich. *47S-4*
Gulban, William D., 4350 River Rd. N.W., Washington 16, D. C. *14A-2*
Gulick, Walter, Ethyl Corp., Box 341, Baton Rouge 1, La. *41S-3*
Gunderson, Robert B., 6514 Sheridan, Richfield 23, Minn. *38S-4*
Gunnis, William H., 406 Gordon Rd., Whitpain Estates, Ambler, Pa. *31S-4*
Gunvalsen, Arthur W., 3411 W. 119 St., Cleveland, Ohio *7A-2*
Gurniak, Theodore B., 6425 Hasbrook Ave., Philadelphia 11, Pa. *31A-2*
Gustad, Louis Jr., R #1, Crooksville, Ohio *1A-2*
Gustafson, J. Edwin, 3119 Erie St., Erie, Pa. *51A-2*
Gustat, George H., 180 Kilbourn, Rochester, N. Y. *44S-4*
Gutfreund, Sidney B., 3050 Edwin Ave., Ft. Lee, N. J. *61A-2*
Guthrie, William H., 18838 Milton Dr., Glendora, Calif. *23S-4*
Guzikowski, Matthew J., General Elec. Co., Ind. Park Court St., Syracuse, N. Y. *13A-2*
Gwizdak, Daniel J., 6215 Linwood Ave., Cleveland 3, Ohio *7AF-4*

Haas, Morton V., 1008 Ingleside Ave., Jacksonville, Fla. *27S-4*
Haase, Richard H., Univ. of Calif. Engr., Los Angeles 24, Calif. *23A-1*
Haddock, A. J., Armco Drainage & Metal Products, P.O. Box 1699, Houston 1, Texas *22A-1*
Haefele, Herman A., 39 Nathan Hale Dr., Huntington, L. I., N. Y. *61A-2*
Haertling, Elliott A., 9242 Tutwiler Ave., St. Louis 21, Mo. *16A-1*
Hagan, Joseph W., 3706 San Juan, Tampa, Fla. *6A-1*
Hagen, Harry A., 1155 Hempstead Dr., Cincinnati 31, Ohio *8A-2*
Hagstrom, Roy A., C. Brewer & Co., Ltd., P.O. Box 3470, Honolulu 1, Hawaii *6S-3*
Hahn, Harry W., 8520 S.W. 43, Miami, Fla. *40AF-3*
Hahn, Irvin R., General Electric Co., 1734 S. Hanna St., Ft. Wayne, Ind. *34AF-3*
Hahn, William F., 1127 N. Shadesview Terr., Birmingham 9, Ala. *9A-2*
Haick, George F., Otis Elevator Co., 44 Wells St., Yonkers, N. Y. *5A-2*
Hailey, Elzie C., 7818 Sharondale Dr., Houston, Texas *22A-1*
Hain, Robert D., Hammermill Paper Co., East Lake Rd., Erie, Pa. *51A-2*
Hajjar, Albert G., 516 Ridgedale Ave., Birmingham, Mich. *47A-2*
Halcomb, Willard L., R #7, Box 434, Jacksonville, Fla. *27A-2*
Hale, Harold D. Jr., 34 Malbone Rd., Newport, R. I. *6A-1*
Halko, Michael, Griscom-Russell Co., 3rd & Wetmore St. S.E., Massillon, Ohio *19AF-3*
Hall, Carl C., 926 S. 2nd East, Orem, Utah *50A-2*
Hall, Edward P., Box 544, East Canton, Ohio *19S-3*
Hall, Francis B., 122 Bungalow Terr., Syracuse 4, N. Y. *13S-4*
Hall, H. Lawrence, 4153 W. 62nd St., Los Angeles 43, Calif. *23S-4*
Hall, Harold C., Kaiser Aluminum & Chem. Corp., Box 1031, Baton Rouge, La. *41AF-3*
Hall, Robert A., 1170 Sycamore Dr., Decatur, Ga. *6A-2*
Hall, Robert J., 124 May St., Worcester, Mass. *6A-1*
Hall, William Clark, 4009 Summit Ridge, Dallas, Texas *10A-1*
Hall, William P. Jr., P.O. Box 6194, Ft. Loma Station, San Diego 6, Calif. *29S-4*
Halladay, William J., 13 Wenliss Terr., Wappingers Falls, N. Y. *6S-3*
Haller, Walter M., 1193 E. 168th St., Cleveland 10, Ohio *7S-4*
Halley, Joseph, 6349 So. Bishop St., Chicago 36, Ill. *25A-1*
Halsted, Samuel H., Wilsey & Ham, 111 Rollins Rd., Millbrae, Calif. *37S-4*
Halterman, Edward G. Jr., Hastings, W. Va. *6A-1*
Hamarat, Metin R., 304 La Fayette Circle, Savannah, Ga. *26S-3*
Hamilton, John C., Cornish Wire Co., Williamstown, Mass. *62A-2*
Hamilton, Loren K., 402 Western Ave., Auburn, Washington *20A-2*
Hamilton, Robert W., 4817 N. Detroit, Oklahoma City 12, Okla. *57A-1*
Hamje, John F. Jr., 124 Palmwood Ave., Ashland, N. J. *31A-4*
Hamman, Robert J., A. T. Kearney & Co., 135 S. Lasalle St., Chicago, Ill. *25S-4*
Hammock, Branch R., 157 Valley Rd., Waynesboro, Va. *6A-1*
Hammond, Ross Wm., 6109 Milburn, Ft. Worth 16, Texas *10A-1*
Hammons, Don R., 1013 E. 23rd St., Bryan, Texas *6A-1*
Hampton, Edward B. Jr., 840 Shoreland Rd., Winston-Salem, N. C. *21A-2*
Hampton, Emery W., R #12, Flemington, N. J. *6A-1*
Handsaker, William N., Toro Mfg. Corp., 3042 Snelling Ave. So., Minneapolis, Minn. *38A-2*
Haney, Charles N., 1660 So. Dahlia, Denver, Colo. *32A-1*
Hanke, Delford E., Kimberly-Clark Corp., Fullerton, Calif. *23A-1*
Hanna, Harold W., 2721 Vermont St. N.E., Albuquerque, N. M. *59AF-3*

Hanna, Raymond M., 6191 Inspiration Way, La Jolla, Calif. *29S-4*
Hanna, Roger S., 11 Schenck Ave., Apt. 3G., Great Neck, N. Y. *5A-4*
Hannigan, Richard J., 1232 Sunset Blvd., Waco, Texas *0A-3*
Hansen, Curtis LeRoy, Audubon, Iowa *0A-1*
Hansen, Elmer H., 8427 Ney Ave., Oakland 5, Calif. *12S-4*
Hansen, Fred W., 1340 South Ave., Bradford, Pa. *0S-3*
Hanson, Charles A., Ind. Engr. Div., Deere & Co., Moline, Ill. *46A-2*
Hanson, J. Robert, Rheem Automotive Co., Placentia Ave., Fullerton, Calif. *23S-4*
Hanson, Joseph B., 168 N. 4th East, American Fork, Utah *50S-4*
Hanson, Ross W., 3333 Birch St., San Leandro, Calif. *12A-1*
Harbilas, James G., 103 Vermilyea Ave., New York 34, N. Y. *5A-2*
Hardesty, Wayne L., General Electric Co., E.O.D. Mfg.—Assembly-Spares, Bldg. A., Evendale, Ohio *8S-4*
Hardin, John H., Room 17, Bell House Hotel, 928 Black Diamond St., Pittsburgh, Calif. *12A-1*
Hardin, Richard M., 1420 Linden Ave., Dearborn 8, Mich. *47S-4*
Harding, Alan, 8100 Varner Road Cincinnati 27, Ohio *8AF-4*
Harding, John E., 109 Taylor Rd., Oak Ridge, Tenn. *11S-4*
Hardy, Clyde H., 2871 Filmore, Salt Lake City, Utah *50S-4*
Haren, Ralph J., 50 Castle Blvd., Akron 13, Ohio *52A-1*
Harlan, John D., 328 Gurney Rd., Franklin, Pa. *24A-3*
Harlan, Nigel R., 3920 Alma Ave., Richmond, Va. *0A-1*
Harlowe, Harold J., 6810 Carnegie Dr., Richmond, Va. *0A-1*
Harman, Glenn W., I.B.M., Dept. 608, 590 Madison Ave., New York, N. Y. *5S-4*
Harmath, John, 7902 Goodman Ave., Cleveland 5, Ohio *7AF-4*
Harp, John M., 147 Wilgate Rd., Owings Mills, Md. *42A-2*
Harper, J. Allen Jr., 724 Martin Rd., Philadelphia 17, Pa. *31A-2*
Harpst, William C., P.O. Box 663, Fortuna, Calif. *0A-1*
Harrell, Owen D., R # 2, Whiteville, N. C. *0A-1*
Harrington, Lawrence C., Owens Corning Fiberglass Corp., Newark, O. *1A-2*
Harris, James A. Jr., 706 Normal Ave., Ashland, Ore. *12A-1*
Harris, J. Leonard, Columbia-Geneva Steel Div., USC., P.O. Box 510, Provo, Utah *50A-2*
Harris, Milward V., 12600 Skyline Blvd., Oakland 19, Calif. *12S-4*
Harris, Walter E., 310 S. 2nd East, Springville, Utah *50A-2*
Harrison, Benjamin D., 290 S. Lakeshore, Baton Rouge, La. *41S-3*
Harrod, George R., 730 Jones St., Athens, Tenn. *0A-1*
Harry, Grant V., c/o Bank of N.S.W., 47 Berkeley Sq., London W1, U.K. *0A-1*
Harsh, David J., 5832 W. Stack Dr., Milwaukee 14, Wisc. *45A-2*
Hart, Cornelius A., 10000 W. 21st Ave., Denver 15, Colo. *32A-1*
Hart, J. C., Box 137, Lenox, Mass. *0S-3*
Hart, Julian Jr., R # 4, Box 244, Huntsville, Ala. *0A-1*
Hart, Martin, 321-A Park View Apts., Collingswood 6, N. J. *31S-4*
Harte, John J., P.O. Box 2192, Atlanta 1, Ga. *6S-4*
Hartnell, Freeman H., King Circle Rd., Rt. 1, Corning, N. Y. *48S-3*
Hartsfield, Alfred R., 7 Colby Lane, Meadowbrook, Pensacola, Fla. *33A-1*
Hartsock, Joseph R., 241 Ertle Ave. N.E., Massillon, Ohio *19S-3*
Hartwell, Jack H., 657 W. 8th St., Erie, Pa. *51A-2*
Harvey, Clifford O. Jr., 117 Calle De Arboles, Redondo Beach, Calif. *23A-1*
Harvey, Emmett D., 9549 Sara Ct., Arlington, Calif. *0A-1*
Harvey, Louis R., 8511 Friendship Rd., Houston 23, Texas *22A-1*
Haselmaier, Carl G., 400 Rockingham St., Rochester 20, N. Y. *44A-2*
Hasenzahl, Walter W. Jr., 49 Forest Ave., Ft. Thomas, Ky. *8S-4*
Haskel, Saul H., 85 Bayberry Lane, New Rochelle, N. Y. *5S-4*
Haskins, Charles G., 26831 Gary Ave., Euclid 32, Ohio *7AF-4*
Hassell, Horace P. Jr., 1824 Kettering Rd., Alcoa, Tenn. *11A-2*
Hastings, Scott R., 989 Learidge, Cleveland 24, Ohio *7S-4*
Hastings, Lt. Col. Vernon L., c/o Western Development Div., Box 262, Inglewood, Calif. *23A-1*
Hatch, Joseph W., 2082 Dellwood Dr. N.W., Atlanta, Ga. *6S-4*
Hatcher, Sherrill T., Woodson Dr., Rt. 3, Knoxville, Tenn. *11A-2*
Hatfield, Loren H., 222 Gheens Ave., Louisville, Ky. *18A-1*
Haulbrook, Tim W. Jr., 970 Gaston St. S.W., Atlanta, Ga. *6A-2*
Hauser, Norbert, Dept. of Ind. Engr., New York Univ., Bronx 53, N. Y. *5A-2*
Havlena, Alfred A., 380 High-Tee., Willowick, Ohio *7A-2*
Hawkins, Donald R., 82 Woods Rd., Pittsburgh 21, Pa. *3A-1*
Hawkins, Elmer, Jr., 117 W. Monument St., Dayton 2, Ohio *2A-2*
Hawkins, John W., 4213 S. Osaugo, Tulsa, Okla. *15A-1*
Hawley, Carl S., General Elec. Co., Rm. 31, Bldg. 3, Court St., Syracuse, N. Y. *13AF-4*
Hayes, Andrew J., 2175 Mack Circle, Dallas 27, Texas *10S-3*
Hayes, Don G., 1623 S. Gary, Tulsa, Okla. *15A-1*
Hayes, Robert W., 502 First St., Athens, Ala. *0A-1*
Haynes, Capt. James T., 0-1334142, 7804th A.U., c/o Post Engr., APO 122, New York, N. Y. *0A-1*
Haynie, W. Cornell, P. O. Box 322, Pleasant Grove, Utah *50A-2*
Hayzlett, Robert R., 6740 Rosefield Drive, San Diego, Calif. *22A-2*
Hazen, P. F., 66 Stockbridge Rd., Mentor, Ohio *7S-4*
Healy, Daniel J. Jr., 58 Grace St., Malden 48, Mass. *30A-2*
Healy, Edward J., Colgate-Palmolive Co., P.O. Box 346, Jeffersonville, Ind. *18A-1*
Heap, James K., 4428 Sunset Dr., Kalamazoo, Mich. *0S-3*
Hearn, Ira K., Kennecott Copper Corp., Box 1650, Salt Lake City, Utah *50S-4*
Heaton, William R., 7409 Turtle Creek Blvd., Dallas 25, Texas *10A-1*
Hebert, John A. Jr., 1205 Tucker Blvd., Arlington, Texas *10A-1*
Hecht, Irwin M., Lambert Hudnut Mfg. Lab., 400 W. Lincoln Ave., Lititz, Pa. *0S-3*
Hecht, W. Arthur, 552 Glen View Ave., Oakland 10, Calif. *12S-4*
Hecox, George E., R # 1, Defiance, Ohio *0S-3*
Hedgspeth, Duie G., 525 School Way, Louisville 14, Ky. *18S-3*
Hedrick, Elmer K., 6546 Estele Ave., Louisville 14, Ky. *18S-3*
Hegent, Paul G., East Hill Rd., Marcellus, New York *13S-4*
Heggie, Dewey A. Jr., 1824 Longview Dr., Winston-Salem, N. C. *21A-2*
Heiges, Alton M., 236 S. Oakdale St., Sharon, Pa. *24S-3*
Heiland, Robert E., R.F.D. # 1, Coopersburg, Pa. *0S-3*
Heilig, Frank G., P.O. Box 223, Univ. Station., Fayetteville, Ark. *15A-1*
Heilman, Cecil C., 4459 2nd St. N.W., Canton, Ohio *19S-3*
Heinz, John C., 218 N. Gramercy Pl., Los Angeles 4, Calif. *23AF-3*
Heipley, John C., Box 717, Guayama, Puerto Rico *2S-4*
Heitman, Robert L., R # 1, Box 204, Lilline Lane, Allendale, N. J. *5S-4*
Heitzman, Dale L., 1600 30th St., Rock Island, Ill. *46A-2*
Hellstern, Vernon M., 765 W. Oak Dr., Glendale 22, Mo. *16A-1*
Helmken, Gilbert M., 1514 Forsyth Rd., Savannah, Ga. *26A-3*
Hendershot, Lester K. Jr., 41 Country Club Dr., Box 253, Mt. Marion, New York *0A-1*
Henderson, Clark, 1962 Primrose Ave., S. Pasadena, Calif. *23A-3*
Henderson, Edwin J., 469 Sharpsville Ave., Sharon, Pa. *24S-3*
Henderson, Frederick R., Northeastern Univ., 360 Huntington Ave., Boston 15, Mass. *30S-4*
Henderson, James A. Jr., Industrial Engr. Dept., P.O. Box 570, Savannah, Ga. *26A-1*
Henderson, Robert E., 1226 Vaughn Rd., Memphis, Tenn. *28AF-4*
Hendricks, Charles Y., 10302 Sylvia Dr., Dallas 28, Texas *10A-1*
Hendricks, Kenneth C., George Evans Corp., 121-37 St., Moline, Ill. *46A-2*
Hendricks, Wesley V., c/o Onomea Sugar Co., Papaikou, Hawaii *0A-1*
Hennes, Freddie J. Jr., P.O. Box 661, Tulsa 2, Okla. *15A-1*
Hennig, Heinz G., 6324 Mandalay Dr., Cleveland 30, Ohio *7S-4*
Henning, Edward I., 753 Woodland Ave., Wadsworth, Ohio *52A-1*
Henritzy, George J., 61 Keeler St., Rochester 21, N. Y. *44A-2*
Henry, Chester L., 2532 Vineville Ave., Macon, Ga. *55A-1*
Henry, Edward H., Aerojet General Inc. Bldg., 59A, Azusa, Calif. *23S-4*
Henry, John A., 230 Deo Drive, Newark, Ohio *1A-4*
Henry, J. Robert, Cleveland Diesel Div. G.M.C., 2160 W. 106th St. Cleveland 11, Ohio *7S-4*
Henry, Patrick L., Sharon Steel Corp., S. Irvine Ave., Sharon, Pa. *24S-3*
Henry, Rosa May, 4053 Goodlett Ave., Memphis, Tenn. *28A-2*
Henschen, Robert H., 4009 Reed, Ft. Wayne, Ind. *34A-1*

Hense, Marshall D., U.S.S. (Gary Steel Works), 1 N. Broadway, Station #20, Gary, Ind. *53A-1*
Hensel, James H., 119 Mariemont Dr., Westerville, Ohio *1A-2*
Hensley, Lee R., 1228 15th St., Rock Island, Ill. *46A-2*
Henson, Shelby R., 4927 Balkin, Houston, Texas *22S-4*
Herbst, Ray J., Union Metal Mfg. Co., Maple Ave. N.E. Canton, Ohio *19S-3*
Herbst, Walter R., 9310 Fleetwing Ave., Los Angeles 45, Calif. *23A-1*
Herlihy, John L., 1624 W. 107th St., Chicago 43, Ill. *25S-4*
Herman, Benjamin J., 9635 Molly Lea Dr., Baton Rouge, La *41S-3*
Herod, Robert G., 1603 S. Knoxville, Tulsa 12, Okla. *15A-1*
Herre, Veith H., P.O. Box 957, Louisville 1, Ky. *18S-3*
Herrick, Dee O., 15 E. Jackson Rd., Webster Groves 19, Mo. *16A-1*
Herriges, Roland C., 3923 Vera Cruz Ave., Robbinsdale 22, Minn. *38S-4*
Herring, Harold F., Martin & Blakey, 600 N. 18th St., Birmingham, Ala. *9A-2*
Herrmann, Roy, 131 E. 93rd St., New York, N. Y. *5S-4*
Hershey, Richard A., 1943 Barrie, N.W., Canton 8, Ohio *19S-3*
Hertz, David B., 225 East 74th St., New York 21, N. Y. *5S-4*
Hester, E. Gorham, 310 Steuben St., Corning, N. Y. *48S-3*
Hester, Eugene A., City #8, Eagleton Rd., Maryville, Tenn. *11A-2*
Hetrick, George J., 862 Glenn St., Philadelphia 15, Pa. *31S-4*
Heuser, Albert S., 22 Village Lane, Middle Town, N. J. *0A-1*
Heuser, Frederick W., 207 Arnold Blvd., Warner Robins, Ga. *55A-1*
Heydet, Robert J., 1019 James St., Syracuse, N. Y. *13A-2*
Heym, Howard F., 443 Lynn Ave., Concord, Calif. *12A-1*
Heymann, Ralph, 32-45 91st St., Jackson Heights, L. I., N. Y. *5A-2*
Hibbs, Earle L., 75 Durkar Lane, Rochester 16, N. Y. *44S-4*
Hicks, Howard J. Sr., R #1, Heiskell, Tenn. *11A-2*
Hidzick, George M., 2194 48th Ave., San Francisco 16, Calif. *12A-1*
Hiett, Tee H. Jr., Georgia Inst. of Technology, Ind. Engr. Dept., Atlanta, Ga. *6A-2*
Higgins, F. Leroy, 1129 Front St., Vestal, N. Y. *48A-1*
Higgins, Randall L., 4495 Illinois, San Diego, Calif. *29S-4*
Higgins, Shelbert L., 108 Redbud Lane, Tullahoma, Tenn. *64A-1*
Highley, Paul G., Laclede Christy Co., 2000 Hampton Ave., St. Louis 10, Mo. *16A-1*
Hildenbrand, Robert W., 245 Westview Ave., Wadsworth, Ohio *52S-3*
Hileman, Wilson T., 2624 Exeter Rd., Cleveland Heights 18, Ohio *7S-4*
Hiles, Harry R., 3603 Ridge Parkway, Erie 7, Pa. *51A-2*
Hilker, Donald H., Rt. 2, Box 306, Glen Burnie, Md. *14S-4*
Hill, Arthur, 4438 Wilmette St., Ft. Wayne, Ind. *34A-1*
Hill, Hugh G., Dept. 635, Western Electric Co., Inc., Winston-Salem, N. C. *21A-2*
Hill, Robert B., Plant Engr., 6000 W. 51st St., Chicago, Ill. *25A-1*
Hiller, James C., 10624 First Ave., Inglewood, Calif. *23S-4*
Hillmer, Harold E., 2968 Oregon Ave., Granite City, Ill. *16AF-3*
Hilsinger, William N., 5850 S.E. Yamhill, Portland, Ore. *0A-1*
Himel, James H., Standard Oil Co. of Texas, P.O. Box 862, El Paso, Texas *0A-1*
Hinck, Frederick W. Jr., Lyons Rd., R.F.D., Basking Ridge, N. J. *5S-4*
Hine, Lloyd L. Jr., The Hoover Co., North Canton, Ohio *19S-3*
Hinkley, Kirk S., 6 Susquelanna Ave., Hallstead, Pa. *0A-1*
Hints, Robert, 2623 Ridgemore Rd. N.W., Atlanta, Ga. *6A-2*
Hintz, Robert G., 1037 Woodlawn Ave., Rockford, Ill. *0A-1*
Hippert, John W., 1511 Washington Blvd., Huntington 1, W. Va. *58A-2*
Hirsch, James E., 1256 Brockley Ave., Lakewood 7, Ohio *7A-2*
Hirway, Rukmaji R., 105 Kenyon St., Hartford, Conn. *0A-1*
Hisey, Elmer, 4218 Brush Rd., West Richfield, Ohio *17A-2*
Hitt, Joseph E. Jr., 3782 Milan St., San Diego 7, Calif. *29S-4*
Hlavenka, Thomas T., 21 Pierson St., Dover, N. J. *0A-1*
Hlavka, Joseph, 772 Ogilvy Ave., Montreal, Canada *0S-3*
Hoag, Ralph E. Jr., 96 Richard St., Dover, N. J. *0S-3*
Hoban, John C., 9902 Montauk Ave., Bethesda, Md. *14AF-4*
Hobbins, Joseph N. Jr., 4229-B Guilford Dr., College Park, Md. *14A-2*
Hobden, Robert W., 2143 Ramona Dr., Pleasant Hill, Calif. *12A-1*
Hodge, John E., 2948 Benkley, Dallas, Texas *10A-1*
Hodge, Millard W., 314 Lakeview Blvd., Winston-Salem, N. C. *21S-4*
Hodson, Robert W., 730 Serra Dr., So. San Francisco, Calif. *12A-1*
Hodson, William K., 718 Wallace Ave., Pittsburgh 21, Pa. *3S-3*
Hoebake, David H., R. R. Donnelley & Sons Co., 350 E. 22nd St., Chicago 16, Ill. *25A-1*
Hoernlein, Henry G., Military Manuals Co., Wood Bldg., Renton, Wash. *20AF-3*
Hoexter, Rolf, 2329 Hudson Terr., Coytesville, N. J. *5S-4*
Hoff, Paul L., 733 W. Water St., Elmira, N. Y. *48S-3*
Hoffer, Stefan A., 2904 Eagle St., San Diego 1, Calif. *29S-4*
Hoffman, George W., 565 Evening St., Worthington, Ohio *18-4*
Hoffman, Harlan, 221 Croyden, Billy Mitchell Village, San Antonio, Texas *16A-1*
Hoffman, John H., Proctor & Gamble Mfg. Co., Packers Station, Kansas City 3, Kansas *0A-1*
Hoffman, John H., 3637 Ravenwood Ave., Cincinnati 13, Ohio *8A-2*
Hoffmann, Edwin L., Whirlpool-Seeger Corp., Estate Div., East Ave., Hamilton, Ohio *8S-4*
Hoffman, William H., Aluminum Co. of America, Box 500, Lafayette, Ind. *35A-2*
Hoffmeister, George W., 38 Alba Rd., Willow Grove 9, Pa. *31S-4*
Hofstetter, Jack C., 15965 Nelacrest Rd., East Cleveland 12, Ohio *7A-2*
Hogan, Robert L., 90 Riverside Dr., Apt. 4, So. Charleston, W. Va. *58A-2*
Hogan, Roland R., 1002 No. Clay Ave., Kirkwood 22, Mo. *16A-1*
Hogberg, Henry C., 3225 N. Main St., Dayton, Ohio *2S-4*
Hohengarten, John J., 1725 Blue Jay, Brentwood 17, Mo. *16A-1*
Hohenstein, C. L., Box 455, Newark, Ohio *1A-2*
Hohmann, Fritz C., 515 E. 12th North, Bountiful, Utah *50A-2*
Hoke, David W. Jr., R #1, Box 606 E, Ft. Worth, Texas *10A-1*
Holder, Willis G., 6301 Wilcox Rd., Dublin, Ohio *18-4*
Holdren, Carl E., 1515 Dana Ave., Cincinnati 7, Ohio *8S-4*
Holler, Fred A., 40 Norwich Ave., Pittsburgh 29, Pa. *3A-1*
Hollingshead, Charles O., 2110 N. Union, Shawnee, Okla. *57S-3*
Holme, William M., 1933 No. Grace, Hollywood, Calif. *12S-4*
Holmes, Clayton C. Jr., 2412 Williams St., High Point, N. C. *21A-2*
Holmes, C. Daniel, 205 St. Margaret Dr., Lexington, Ky. *18S-3*
Holmes, Joseph P., 518 E. Wilson Blvd., Hagerstown, Md. *0A-1*
Holmes, Wayne, P.O. Box 344, Columbus 16, Ohio *18-4*
Holser, H. Donald, 2693 Las Aromas, Oakland 11, Calif. *12A-1*
Holtzman, Allan O., 7624 Gannon Ave., University City 5, Mo. *16A-1*
Holway, Robert G., 3980 N.W. 64th Ave., Miami Springs, Fla. *40S-3*
Holway, William G., 440 Pleasant St., Norwood, Mass. *30A-2*
Holzman, Albert G., 7124 Michigan Ave., Pittsburgh 18, Pa. *3A-3*
Homer, Eugene D., 6114 Highland Place, West New York, N. J. *5A-2*
Homeyer, Howard C., 4422 Kinglet, Bellaire, Texas *22A-1*
Hon, Richard L., 513 Rose Rd., No. Canton, Ohio *19A-1*
Hood, Henry L., 206 E. Frisco Rd., Edgewater, Pensacola, Fla. *33A-1*
Hooks, Donald L., 6011 44th Ave., Seattle 6, Wash. *20A-2*
Hooper, Charles R., 1719 Bayard Ave., St. Paul 5, Minn. *38A-2*
Hoos, John W., 719 Alton Rd., Danville, Ky. *0A-1*
Hoover, Glen C., 3120 Princeton Dr., Dayton 6, Ohio *2S-4*
Hoover, Herbert C., Waldorf Astoria Hotel, New York, N. Y. *5F-0*
Hoover, Thomas E., 272 Brevoort Rd., Columbus 14, Ohio *1A-2*
Hopf, Adolf R., D. C. Latella & Association, Widener Bldg., Philadelphia, Pa. *31S-4*
Hoppe, John G., 4115 Avondale Dr., Ft. Wayne, Ind. *34A-1*
Horne, Clayton A., 752 Racine Ave., Columbus 4, Ohio *1A-2*
Horning, David C., 2315 ½ Larch St., Alhambra, Calif. *23A-1*
Horst, James D., 1219 S. Helberta Ave., Redondo Beach, Calif. *23A-1*
Horst, N.E., 1874-12th Ave., Moline, Ill. *46S-4*

Horvath, Theodore F., 175 Seneca Parkway, Rochester 13, N. Y. *44A-2*
Hoskins, Donald L., 3476 Springhill Rd., Lafayette, Calif. *12A-1*
Hostetter, David L., 1500 Kaneville Rd., Geneva, Ill *25A-3*
Hotinger, Harvey L. Jr., Rt 1, Lexington, Va. *6A-1*
Houghton, Thomas R., 133 Main St., Olyphant, Pa. *0A-1*
Houk, Richard L., United Air Lines Maint. Base, S. Francisco International Airport, San Francisco, Calif. *37S-4*
House, Dale C., 3602 N. Versailles, Dallas 9, Texas *10A-1*
House, Jackson H., Rt. 5, Winston Salem, N. C. *21A-2*
Houser, Everett K., P.O. Box 388, Bonita, Calif. *29A-2*
Housewright, L. D. Jr., 901 N. Second, Austin, Minn. *10A-3*
Houston, Charles W., Corning Glass Works, Walnut St., Corning, N. Y. *48S-3*
Housley, Nicholas G., 360 E. 55th St., New York 22, N. Y. *5S-4*
Houts, Richard C., 1479 West Ave., Fullerton, Calif. *23A-1*
Howard, Arthur M., Oneida Ltd., Sherrill, N. Y. *13S-4*
Howard, Charles G., American Viscose Corp., Nitro, W. Va. *58S-4*
Howard, Dwight Jr., 212 Greenfield Ave., Newark, Ohio *1S-4*
Howard, Edgar S., Minnesota Mining & Mfg. Co., 900 Fauquier Ave., St. Paul 6, Minn. *38S-4*
Howard, George W., 4420 Blackthorne, Long Beach 8, Calif. *23A-1*
Howard, Raymond L., Semiconductor Dept., Westinghouse Elec. Corp., Youngwood, Pa. *6A-1*
Howarth, Steadman L., 1802 So. Winona Ct., Denver 19, Colo. *32A-1*
Howe, Allen J., 11 Washington Pl., Suffern, N. Y. *5A-2*
Howe, Charles A., Plant Supt. Brower Mfg. Co., Quincy, Ill. *9A-1*
Howe, Dennett F., 5070 Drake Rd., Cincinnati 27, Ohio *8S-4*
Howell, Walker T., 461 W. Van Buren St., Apartment 2A, Battle Creek, Mich. *0A-1*
Howes, Richard W., 2023 Elizabeth Ave., Winston Salem, N. C. *21A-2*
Howland, Daniel, 2018 Tewksbury Rd., Columbus 21, Ohio *1A-2*
Hoyer, Robert W., Dow Chemical Co., Pittsburg, Calif. *12AF-3*
Hoyt, Bernard W., Woodside Rd., Fayetteville, N. Y. *13A-2*
Hruska, Ralph E., Box 1979, Tulsa, Okla. *15S-3*
Hubacek, Lawrence Joseph, 3206 W. 65th Pl., Chicago 29, Ill. *25A-1*
Hubbard, Ben W., 1981 Roslyn Rd., Grosse Pointe 36, Mich. *47A-2*
Hubbard, Everett W. Jr., 1005 E. Moses, Cushing, Okla. *0S-3*
Hubbs, William H., 312 Grata Rd., Knoxville, Tenn. *11A-2*
Huber, Dalton A., 3406 Zenith Ave. No., Robbinsdale, Minn. *38A-2*
Hudec, Prof. Edward J. R., Case Institute of Tech., University Circle, Cleveland 6, Ohio *7S-4*
Hudson, Wellborn R., 022B, Engr. Bldg., University of Iowa, Iowa City, Iowa *46S-4*
Huey, Paul E., 212 S. Maple St., Webster Groves 19, Mo. *16S-3*
Huff, Arthur D., 21 Lakeview Terr., Rochester 13, N. Y. *44A-2*
Huff, 2/lt. Warren P., 1389 Stone Rd., Charleston 4, W. Va. *58A-2*
Huffman, Howard L., 1205 So. Willson, Bozeman, Montana *0S-3*
Huffman, Jack H., 3849 Palm, Houston, Texas *22A-1*
Huffman, John R., Univ. of Calif., Engr. Dept., Los Angeles 24, Calif. *23S-4*
Hufnal, David H., Fairfield Rd., Devon, Pa. *31A-2*
Hughes, Elmer C., 313 E. Manchester Rd., Syracuse 4, N. Y. *13S-4*
Hughes, James F., 5019 Sellhorn Rd., Ft. Wayne, Ind. *34A-1*
Hughes, William H., 39 R. Franklin Apts., Savannah, Ga. *26A-1*
Hughey, Allen H. Jr., Standard Oil Co. of Texas, P.O. Box 862, El Paso, Texas *0S-3*
Huisinga, Fred W., 15581 Ashland Ave., San Lorenzo, Calif. *12AF-3*
Hull, Michael H., 1010 Courtney Dr. N.E., Atlanta 8, Ga. *6A-2*
Hulley, Prof. Oliver S., 2170 Webster Dr., Schenectady 9, N. Y. *0S-3*
Hult, James C., Deere & Co., 3300 River Dr., Moline, Ill. *46A-2*
Hummel, Joseph O. P., 1522 Red Oak Dr., Silver Spring, Md. *14S-4*
Humphrey, Hilman L., 3321 Ave. G, Ensley, Ala. *9A-2*
Hunt, Alva A., 3535 Lacey Circle, Apt. 4, Hapeville, Ga. *6A-2*
Hunt, Clarence W., Rt. 1, Transfer, Pa. *24A-1*
Hunt, Harry B. Jr., General American Trans. Corp., 4405 Euclid Ave., East Chicago, Ind. *53A-1*
Hunt, James F., The International Nickel Co. Inc., Guyan River Rd., Huntington, W. Va. *58S-4*
Hunt, Marshal Jr., Universal Atlas Cement Co., Buffington Station, Gary, Ind. *53A-1*
Hunt, Rogers C. Jr., Amer. Radiator & Standard, Sanitary Corp., 1541 S. 7th St., Louisville, Ky. *18A-1*
Hunt, William P., Apt. 1, 115 Pacific, Houston 6, Texas *22A-1*
Hunton, John W., R.F.D. #1, Hopewell Junction, N. Y. *0A-3*
Huntress, Andrew W., 1813 Veitch St. North, Apt. 7, Arlington, Va. *14A-2*
Hurd, Phillip E., 14521 E. Sam Esteban, La Mirada, Calif. *23S-4*
Hurme, Charles H., 134 MacArthur Dr., Rochelle Park, N. J. *5A-2*
Hurst, Walter C., Arkoma, Okla. *0A-1*
Hurt, George T., Rt. 34, Traylor Circle, Lynchburg, Va. *0A-3*
Hurvitz, Arthur, 151 Taber Ave., Providence 6, R. I. *0A-1*
Hussey, Prof. Robert A., Dept. of Ind. Engr., Univ. of Puerto Rico, Mayaguez, Puerto Rico *0S-3*
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Hutcheson, Richard C., 1727 Holly Ave., Savannah, Ga. *26A-1*
Hutchison, Robert G., 3627 Indianaola Ave., Des Moines 15, Iowa *0S-3*
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Hyde, Robert M., 402 Lincoln Ave., Chesterton, Ind. *53S-3*
Hymes, Charles R., 314 Harvard Circle, American Fork, Utah *50S-4*
Hyre, John M., 166 Washington, N.E., Warren, Ohio *24AF-3*

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Illig, Leon E., 179 Castle Hill Rd., East Aurora, N. Y. *49A-1*
Imhoff, Prof., John L., Head Dept. of Ind. Engr., Univ. of Arkansas, Fayetteville, Ark. *0S-3*
Impagliazzo, A. Michael, The Griscom-Russell Co., Massillon, Ohio *19S-3*
Indeck, Jack, 29 Coral Ave., Winthrop, Mass. *30A-2*
Infield, Dwight H., 516 W. 28th, Erie, Pa. *51S-4*
Infield, James M., 516 W. 28th St., Erie, Pa. *51A-2*
Inglis, Allick W. Jr., 3 Chipper Circle, Savannah, Ga. *26A-1*
Inman, Raymond C., Bemis Bro. Bag Co., 604 S. 4th St., Minneapolis 15, Minn. *38A-2*
Irelan, Clyde E., 4154 Nulty Dr., Concord, Calif. *12A-1*
Ireland, James V., 715 First St., Verona, Pa. *3A-1*
Ireson, Prof. W. Grant, 3760 Wright Pl., Palo Alto, Calif. *37S-4*
Irish, Jack R., 907 B Pinedell Manor, Lufkin, Texas *22A-1*
Irwin, Eugene S., 4301 Fredericks, Memphis, Tenn. *28A-2*
Irwin, George G., 12454 Princeton, Chicago 28, Ill. *25S-4*
Irwin, Robert D., Rheem Mfg. Co., 801 Chesley Ave., Richmond 4, Calif. *12A-1*
Isbell, James M., 3632 Watonga, Ft. Worth, Texas *10S-3*
Isbell, Joseph E., 234 Stevenson Blvd., Buffalo 21, N. Y. *49S-3*
Ishida, Calvin, 924 Agatite, Chicago 25, Ill. *25A-3*
Ittner, Charles N., c/o Amer. Art Metals Co., 433 Highland Ave. N.E., Atlanta 12, Ga. *6AF-4*
Iyer, S. S., 48, Senior Section Officer, G.S. Office, Tisco, Ltd., Jamshedpur 3, India *48-S*

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Jackson, J. Roy, 355 E. End Ave. Beaver, Pa. *3AF-3*
Jackson, Lawrence R., Tool Steel Gear & Pinion Co., 211 Township Rd., Cincinnati 16, Ohio *8S-4*
Jackson, Morris M., Duncan Electric Mfg. Co., Davis Ferry Rd. & 52 By-Pass, Lafayette, Ind. *35A-2*
Jackson, Robert J., 1917 Preston Ave., Los Angeles 26, Calif. *23AF-3*
Jackson, Samual L., 9613 Irene Pl., Affton 23, Mo. *16A-1*
Jackson, Schuyler W., 140 E. Calthrop St., Syracuse, N. Y. *13S-4*
Jacobs, Richard M., 405 Ivywood Ave., Haddonfield, N. J. *31A-2*
Jacobson, Peter, USS NESPSLEN AOG 55, c/c FPO, New York, N. Y. *0A-1*
Jaeger, Herbert H., 19 Orchard, Suffern, N. Y. *5A-4*

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James, Aubrey A., 114 New Mexico Dr., Oakcrest, Pensacola, Fla. *33-1*

James, Ben E. Jr., 2520 Ellis St., Brunswick, Ga. *0A-1*

James, Billy C. Rt. 2, Granbury, Texas *0A-1*

James, David L., 6575 Airline Highway, Baton Rouge, La. *41A-1*

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Jameson, Robert, 221 Farhills Ave., Dayton 9, Ohio *2A-2*

Jamison, Robert H., 504 Genter, La Jolla, Calif. *29AF-4*

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Jansen, Nels H. Jr., Ind. Engr. Dept., R. R. Donnelley & Sons Co., Crawfordsville, Ind. *35S-4*

Jansky, Otto L. Jr., 3406 McRoberts Rd., Pittsburgh 31, Pa. *3A-1*

Janusz, Stanley J., 184 N. 10th St., Newark, Ohio *1A-2*

Jardine, John E. III, 807 Agate St., Anaheim, Calif. *23A-1*

Jarnagin, Douglas C., Union Bag & Paper Corp., Savannah, Ga. *26A-1*

Jarvie, Charles, 2771 No. Arroyo Dr., San Diego 1, Calif. *29A-2*

Jay, Clement E., 2301 W. Farwell, Chicago 45, Ill. *25A-1*

Jaycox, Clinton A., 12751 Hemingway, Detroit 39, Mich. *47A-2*

Jeandrevin, Robert R., 1735 Jefferson Rd. N.E., Massillon, Ohio *19A-1*

Jefferds, Joseph C., Jr., Jefferds & Moore, Inc., 3416 Chesterfield Ave., Charleston 4, W. Va. *58S-4*

Jefferis, Paul L. Jr., 626 6th Ave., Bethlehem, Pa. *0A-1*

Jenkins, Claude M., Standard Steel Spring Div., Furnace St., New Castle, Pa. *24S-3*

Jenkins, C. Robert, Weil McLain Co., 1631 East Ave., Erie, Pa. *51A-2*

Jenner, Clyde V., 417 Linden Ave., Waverly, Ohio *0A-1*

Jenney, Ralph C., 9839 Norlain Ave., Downey, Calif. *23S-4*

Jensen, Owen K., Columbia Geneva Steel Div., U. S. Steel Corp. Provo, Utah *50A-2*

Jensen, William H., C. Brewer & Co., 33 Waianuenue Ave., Hilo, Hawaii *0AF-3*

Jent, William P. Jr., 30 Glenwood St., Winston Salem, N. C. *9A-2*

Jericho, Jack F., 1101 E. 95th Ave., Denver 16, Colo. *32S-3*

Jerome, Waldron R., % North Amer. Aviation, Dept. 490, Downey, Calif. *23S-4*

Jeter, Herman D. Jr., 2100 Greenland, Kingsport, Tenn. *17A-1*

Jewett, Henry Pollard, 2015 W. 98th St., Los Angeles 47, Calif. *23A-1*

Jewett, Kelsey H., 635 Niagara St., No. Tonawanda, N. Y. *49S-3*

John, Carl, Ernst & Ernst, 1356 Union Commerce Bldg., Cleveland 14, Ohio *7S-4*

John, George K., 4172 Edenhurst, Los Angeles 39, Calif. *23S-4*

John, John S., 20 Tiel, Houston, Texas *22S-4*

Johnson, Benjamin N., 1021 Summit North, Apt. 3, Seattle 2, Wash. *20A-2*

Johnson, Carl L. 706 E. Maple St., North Canton, Ohio *19A-1*

Johnson, Cecil G., 3211 Agonne Dr., N.W., Atlanta, Ga. *6A-2*

Johnson, Clarence C., 2362 Strathmore Dr. N.E., Atlanta 5, Ga. *6A-2*

Johnson, Cornelius E., 304 S. Brixton Rd., Garden City, L. I., N. Y. *5AF-4*

Johnson, Donald L., 4657 Oregon St., San Diego 16, Calif. *29A-2*

Johnson, Elmer H., 385 W. 63 St., Hialeah, Fla. *40A-1*

Johnson, Frank J., 863 Wellesley Dr. N.W., Atlanta, Ga. *6S-4*

Johnson, Gene K., Apt. 7, 2869 Herschell St., Jacksonville, Fla. *27A-2*

Johnson, Prof. George C. K., P.O. 1982, University, Ala. *9S-4*

Johnson, Harold W., 17 Addison St., Apt. 5D, Larchmont, N. Y. *5A-2*

Johnson, Harold Z., 5021 Doulton Dr., Houston 21, Texas *22S-4*

Johnson, Harry J., 14751 Coit Rd., Cleveland 10, Ohio *7A-2*

Johnson, Herbert A., 1949 1/4 Argyle Ave., Hollywood, Calif. *23A-1*

Johnson, Hugo K., 1809 23rd Ave., Moline, Ill. *25S-4*

Johnson, Jack J., 25 Coral Dr., Claymont, Del. *0A-1*

Johnson, Jack P., 7840 Juniper St., Gary, Ind. *53A-1*

Johnson, James W., Box 1155, McLain Dr., Melbourne, Fla. *0AF-3*

Johnson, Jeremy E., Engr. Dept. Scovill Mfg. Co., Waterbury, Conn. *0A-1*

Johnson, Jerome, 335 N. Gregg St., Fayetteville, Ark. *0A-1*

Johnson, LaVern M., 2430 Repetto Ave., Montebello, Calif. *23A-1*

Johnson, Lloyd M., 5630 Johnny Cake Rd., Baltimore, Md. *42A-2*

Johnson, Marvin M., 606 W. 30th St., Davenport, Iowa *46S-4*

Johnson, Norman E., 3151 Alki Ave., Apt. 38, Seattle 16, Wash. *20AF-3*

Johnson, Ralph E., Hammermill Paper Co., East Lake Rd., Erie, Pa. *51A-2*

Johnson, Richard A., 169 Quentin Rd. S., Newark, Ohio *1S-4*

Johnson, Robert A., RFD Pleasant St., Millis, Mass. *30A-2*

Johnson, Robert M., 604 Beverly Hills Dr., Smyrna, Ga. *6S-4*

Johnson, Robert O., 1223 W. Gunnison St., Chicago 40, Ill. *25A-1*

Johnson, Thomas E., Alcoa Aluminum Co., Ind. Engr. Dept., Alcoa, Tenn. *0A-1*

Johnson, Wallace R., 3760 Park Blvd. Way, Oakland, Calif. *12A-3*

Johnson, William R., 525 N.W. 37, Oklahoma City, Okla. *57A-1*

Johnston, Charles T. Jr., 1722 S. Main St., Winston Salem, N. C. *21A-2*

Johnston, Ralph E. Jr., 1038 McCausland St., St. Louis 17, Mo. *16A-1*

Johnston, Robert A., 284-D Lakemore Dr., N.E., Atlanta, Ga. *6A-2*

Jolly, Walter H. Jr., 16 Danbury St., Apt. 2, Washington 24, D. C. *14A-2*

Jones, Earl E. R., 51 Oakvale Ave., Berkeley 5, Calif. *12A-1*

Jones, Edsel T., 1111 Euclid Pl., Apt. 3, Huntington, W. Va. *58A-2*.

Jones, George H., R.C.A. Victor Div., Bldg. 5-7, Camden, N. J. *31A-2*

Jones, James M., 1482 Carlton Sq., San Diego 6, Calif. *29A-2*

Jones, Ralph P., 3022 Olive St., Racine, Wisc. *45S-4*

Jones, Robert L., Michigan Cons. Gas Co., 415 Clifford St., Detroit 26, Mich. *47S-4*

Jones, Robert M., 1715 Crestmont Dr., Huntington, W. Va. *58A-2*

Jones, Prof. Robert S., 4317 Bishop Rd., Detroit 24, Mich. *47S-4*

Jones, Verner C., 307 Algomd Dr., Pittsburgh 36, Pa. *3A-1*

Jones, W. Dale, Box 9, East Lansing, Mich. *6S-3*

Jones, Walter L., 2038 So. Pershing Ave., Wichita 17, Kansas *56A-2*

Jones, Wilbur W., 38 Loftus Rd., Pittsburg, Calif. *12S-4*

Jordan, Courtland C., 223 So. Maple Ave., Oak Park, Ill. *25S-4*

Josselyn, P. Dudley, Braden Copper Co., Caletones, Rancagua, Chile, So. America *12A-1*

Jossis, S. A., 639 Capp St., San Francisco, Calif. *12S-4*

Joyce, James E., 1418 3rd Ave. S.E., Cedar Rapids, Iowa *16A-1*

Jozwiak, Eugene R., 2626 Kensington Dr., Saginaw, Mich. *0A-1*

Juba, Eugene Daniel, 990 E. Drinker St., Dunmore, Pa. *0A-1*

Judd, Alfred N., 645 Belgrove Dr., Kearny, N. J. *61A-2*

Judy, Jacob Milan Jr., 156 Clark Pl., Memphis, Tenn. *28A-2*

Jungbluth, Gordon E., 7904 W. Bottsford Ave., West Allis 14, Wisc. *45A-2*

Junno, Uuno F., 6530 Westminster Dr., Parma 29, Ohio *7A-2*

Juran, Joseph M., 195 Beech St., Tuckahoe 7, N. Y. *58-4*

Juul, Paul T., Chief Ind. Engr., Braden Copper Co., Sewell, Rancagua, Chile *0S-3*

Kabak, Irwin, 1878 Harrison Ave., Bronx 53, N. Y. *5A-2*

Kafka, Benjamin F., 2127 S. Marshall Blvd., Chicago 23, Ill. *25S-4*

Kahlen, Harold F., Johns Manville Prod. Corp. P.O. Box 9067 Long Beach 10, Calif. *23S-4*

Kahler, Mahlen F., Time Standards Dept., Ind. Engr. Div., John Deere Waterloo Tractor Works of Deere Mfg. Co., Waterloo, Iowa *0A-1*

Kahn, Irwin W., 16106 Via Lupine, San Lorenzo, Calif. *12A-1*

Kahoun, Frank J., 816 Buckingham Rd., Dayton 9, Ohio *2S-4*

Kaiser, Carl F., 18061 Fernbrook Ct., Cupertino, Calif. *37S-4*

Kaiser, William L, 2203 Richland Ave., Wheeling, W. Va. *0S-3*

Kalajian, Harry H., 14946 Appoline Ave., Detroit 27, Mich. *47A-2*

Kalen, Robert W., Oscar Mayer Packing Co., 1337 W. 2nd St., Davenport, Iowa *46S-4*

Kalin, Stanley R., 2413 Sulvale Rd., Baltimore 9, Md. *42A-2*

Kall, Eugene C., 814 Hampton St., Anaheim, Calif. *23AF-3*

Kallenback, George A. Jr., 1975 Ashley Rd., Philadelphia 38, Pa. *31A-2*

Kamchi, Jerome S., 2125 B No. John Russell Circle, Lynnewood Gardens, Elkins Park 17, Pa. *31A-2*

Kamani, Rasik, 4 Ruia Park, Juhu, Bombay Suburbs, India *0AF-3*

Kamp, Robert F., 407 S. 4 St., Emmaus, Pa. *0A-3*

Kamy, Eugene M., 1520 W. Chestnut St., Chicago 22, Ill. *25A-1*

Kandel, Charles A., 388 Sussex Rd., East Meadow, L. I., N. Y. *5AF-4*

Kane, Donald E., National Container Corp. of Calif., 7th & Terminal Sts., Oakland 4, Calif. *12A-1*

Kane, George E., Ind. Engr. Dept., Lehigh Univ., Bethlehem, Pa. *0S-3*

Kann, Lee Henry, 4545 Osprey St., San Diego 7, Calif. *29S-4*

Kanoza, Daniel J., 1735 Riviera Court, Dayton 6, Ohio *2A-2*

Kanter, Robert L., 2454 Longfellow, Detroit 6, Mich. *47A-2*

Kanton, Lorin B., 8735 Bay Parkway, Brooklyn 14, N. Y. *5AF-4*

Kaping, Alvin E., 3125—40th St., Sandia Base, Albuquerque, N. M. *59A-1*

Kaplan, Daniel R., 129 Chancellor Ave. D-6, Newark, N. J. *5A-2*

Kaplan, David R., 972 Cuyamaca Ave., Chula Vista, Calif. *29S-4*

Kaplan, Harold J., 410 Marlborough Rd., Brooklyn 26, N. Y. *5A-2*

Karger, D. W., 1253 Lake Ave., Ft. Wayne, Ind. *34S-3*

Karlin, Sidney I., 165 E. 179th St., Bronx 53, N. Y. *5A-2*

Karvelis, Norman A., 3112 Fitzpatrick Dr., Concord, Calif. *12A-1*

Kasch, Charles F., Oscar Mayer & Co., 1241 No. Sedwick St., Chicago, Ill. *25S-4*

Kaspic, Stanley J., 410 Pearce Rd., Pittsburgh 34, Pa. *3A-3*

Katch, David, 409 14th Ave., San Francisco, Calif. *12A-1*

Katre, M. S., "Ananda Bhavan", Road No. 2, Contractor's Area, Jamshedpur, India *48-S*

Katz, Herbert, 1299 Eastern Parkway, Brooklyn 33, N. Y. *5A-2*

Kauffman, Phillip A., 1227 Park Ave., Piqua, Ohio *0A-1*

Kauffman, William P., Anheuser Busch Inc., 721 Pestalozzi St., St. Louis 18, Mo. *16S-3*

Kaufman, Maurice B., 6 Margaret Rd., Sharon, Mass. *30A-2*

Kayser, Frank T., 3440 Starr Ave., Toledo, Ohio *36S-3*

Kazimy, Joseph A., 5320 S. Nottingham, Chicago 38, Ill. *25A-1*

Keachie, Prof. E. C., College of Engineering, University of Calif., Berkeley 4, Calif. *12S-4*

Kearby, William P. Sr., Box 1721, Yuma, Ariz. *0S-3*

Kearney, William W., 336 Hoff Ave., Charleston, S. C. *0S-3*

Keating, Arthur E., Keating Rd., Hyannis, Mass. *30S-4*

Keating, Bernard L., 2804 Webster St., Berkeley 5, Calif. *12A-1*

Keating, Jerome W., 1610 Alvina Ave., Sacramento, Calif. *43A-2*

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Kelleher, James P., 1662 Parklime Dr., Pittsburgh 27, Pa. *3A-1*

Keller, George B., 117 E. Grove St., Clarks Summit, Pa. *0A-1*

Keller, Joseph G., 33 Botsford, Poland, Ohio *24S-3*

Keller, Robert A., 6435 Clayton Rd., Clayton 17, Mo. *16A-1*

Kelley, Carl J., 3610 W. 10th Ave., Gary, Ind. *53A-1*

Kellogg, Gordon H., 504 Roxford Rd. So., Syracuse, N.Y. *13A-4*

Kelly, Frank A., U. S. Steel Corp., Gary Steel Works, North Broadway, Gary, Ind. *53S-3*

Kelly, H. H., Granite City Steel Co., 20th & Madison Sts., Granite City, Ill. *16S-3*

Kelly, H. W., 2350 Lane Rd., Columbus 14, Ohio *1S-4*

Kelly, Robert A., 915 Colgate Rd., Whitehall, Ohio *1S-4*

Kelly, Robert D., Engineering Graphics Dept. Michael Golden Hall, Purdue University, Lafayette, Ind. *35A-2*

Kelsey, O. A. Jr., 1892 Andover Rd., Columbus, Ohio *1A-4*

Kemp, Fred F., 342 Woodbine Ave. S.E., Warren, Ohio *24A-1*

Kenagy, James A., 3518 Cheraz, N.E., Albuquerque, N. M. *59A-1*

Kendall, William N., 2801 Martin Lydon Ave., Ft. Worth, Texas *10A-1*

Kennedy, Bernard A., The H. W. Gossard Co., Sullivan, Ind. *0A-1*

Kennedy, Jim F., Rt. 6, Box 158, Tucson, Ariz. *0AF-3*

Kennedy, Michael J., 1463 Fox St., Memphis 11, Tenn. *28AF-4*

Kenney, Judson B., 4751 Orchard, San Diego 7, Calif. *29A-2*

Kenyon, John A., John W. Bolton & Sons, Inc., 9 Osgood St., Lawrence, Mass. *62AF-4*

Keogh, James R. Jr., 1501 E. Willow Grove Ave., Philadelphia 18, Pa. *31S-4*

Kerbow, Gerald T., 2223 Dorrington, Houston 25, Texas *22A-1*

Kerley, William E., 188 Skycrest Dr., Rochester 16, N. Y. *44A-2*

Kerr, Dean D., Dept. of Mines, Utah Copper Div., Kennecott Copper Corp., Bingham Canyon, Utah *50AF-4*

Kerr, Raymond L., 3827 11th St., Port Arthur, Texas *0S-3*

Kersell, Charles A., 9427 S. Hamlin Ave., Evergreen Park, Ill. *25A-1*

Kerutis, Peter J., East Mail St., P.O. Box 244, Wanamie, Pa. *0A-1*

Kerwin, S. William, 1441 Louisiana Ave., Minneapolis 26, Minn. *38S-4*

Keselich, Daniel P., Lash, Pa. *3A-3*

Kessel, Wallace D., 5006 Westover Terrace, Knoxville, Tenn. *11A-4*

Kessie, Milton J., 5811 Bradley Ave., Parma 29, Ohio *7A-2*

Kessler, John W., The Chemstrand Corp., Pensacola, Fla. *33AF-3*

Ketchum, Francis J., 162 Pine St., Corning, N. Y. *48A-1*

Keyt, Donald L., Lake Shore Heights, Gainesville, Ga. *0A-1*

Kilbridge, Maurice D., Ill. Inst. of Tech., 3300 S. Federal St., Chicago 16, Ill. *25S-4*

Kilbury, Minard B., 3928 W. 157th St., Lawndale, Calif. *23A-1*

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Kimberlin, Carroll E., 6239 Eight Ave., No., St. Petersburg, Fla. *0S-3*

Kinder, Horton C., 421 N. Grove Ave., Oak Park, Ill. *25A-1*

Kindle, Irvin J., 1571 Smithville Rd., Dayton 10, Ohio *2S-4*

Kindsvatter, Richard L., 405 E. Irvin Ave., Hagerstown, Md. *0A-1*

King, Alfred S., Gridley Blvd., Sauquoit, N. Y. *0A-1*

King, Arthur H., 1333 Ford Rd., Cleveland 24, Ohio *7S-4*

King, Campbell R., 100 Nolan Rd., Oak Ridge, Tenn. *11A-2*

King, Donald H., 1141 Williams St., Deerfield, Ill. *25A-1*

King, Ernest B., 120 Gale Place, Bronx 63, N. Y. *5A-2*

King, Gordon B., Box 245, Poland, Ohio *24S-3*

King, Lawrence, 1926 Joffre St., Toledo 7, Ohio *36S-3*

King, William W., 1193 Wright Rd., Memphis, Tenn. *28A-2*

Kinser, Robert W., 200 Ivy, Orinda, Calif. *12A-1*

Kirby, John C., 1407—14th St., N.W., Canton, Ohio *19S-3*

Kirk, George B., 720 Palomar Dr., Redwood City, Calif. *37A-1*

Kirkpatrick, John N., 20 Del Monte Dr., Burlingame, Calif. *37A-1*

Kirmaier, Raymond A., 836 Cerrito St., Albany 6, Calif. *12S-4*

Kirschner, Elmer E., 547—49th St. So., St. Petersburg 7, Fla. *0A-1*

Kirshenbaum, Arthur Gerald, c/o Walker, 50 Overlook Terr., N. Y. 33, N. Y. *5A-2*

Kishel, Chester J., 9012 Fernhill Ave., Parma, Ohio *7S-4*

Kitenplon, Richard A., 5116 Nicollet Ave., Minneapolis, Minn. *38S-4*

Kjos, Andrew Brunsdale, Box 344, Mayville, N. D. *0A-1*

Klein, 1st Lt. Bernard J., Dept. of Engr., The Engr. School, Ft. Belvoir, Va. *14A-2*

Klein, Eugene M., 24 Amherst Court, Maplewood, N. J. *61A-2*

Kleinmetz, Eugene I., 261 E. Kingsbridge Rd., New York 58, N. Y. *5A-2*

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Klimkewicz, Ambrose J., 3815 E. 55th St., Cleveland 5, Ohio *7AF-4*

Klingel, William R., 1201 Briarwood Dr., Hamilton, Ohio *8S-4*

Klinstiver, Clyde T., 2007 Jane Ave., Columbus 19, O. *1A-2*

Kliz, Hugo C., Lipe Rollway Corp., 806 Emerson Ave., Syracuse 1, N. Y. *13A-2*.

Klockzim, Raymond L., Line Material Co., 700 W. Michigan Ave., Milwaukee 1, Wisc. *45S-4*
Klopfer, Winston S., 49 Monroe Ave., Newark, Ohio *1A-2*
Kluge, Rolland H., 1519 Salerno Dr., St. Louis 21, Mo. *16A-1*
Knapp, Donald J., 5851 W. 87th St., Los Angeles 45, Calif. *23A-1*
Knaub, Albert J., 2834 W. Susan Curve, Peoria, Ill. *0A-1*
Knauss, Arthur L. C., 3731 School Lane, Newtown Square, Pa. *31A-2*
Knell, Karl, 137 Camellia Dr., Birmingham 9, Ala. *9S-4*
Knezevich, Michael T., Rt. 2, Box 277, Thiensville, Wisc. *45S-3*
Kniffin, Robert F., 24 Garden Rd., Bedford, Ohio *7S-4*
Knight, Earl E., 12 Madison St., Massena, N. Y. *0A-1*
Knight, George D., 8 Walnut Park, Newton, Mass. *30S-4*
Knight, George R., 524 E. Paces Ferry Rd. N.E., Atlanta, Ga. *6A-2*
Knight, John J., 4592 Helene, Memphis, Tenn. *28S-4*
Knight, Kenneth C., 1428 Magdalena Dr., Oklahoma City 9, Okla. *57A-2*
Knighton, Robert L., Commercial Research Dept., Columbia-Geneva Steel Div., 120 Montgomery St., San Francisco, Calif. *12A-1*
Knisley, Leo E., 7677 Watson Way, Citrus Heights, Calif. *43S-4*
Knisley, Maynard R., 7980 Burgandy Lane, Cincinnati 31, Ohio *8A-2*
Knoblock, Gillis, L., 4091 Fizer, Memphis, Tenn. *28A-2*
Knoebel, George J., 2524 Lincoln St. N.E., Minneapolis 18, Minn. *38S-4*
Knoll, Ensign Hugh R., VAW-12, Quonset Pt., R. I. *0A-1*
Knudsen, Kenneth P. Jr., Box 52, Sandy Springs, Ga. *6S-4*
Knuppel, Wesley F., 6003 Oliva Ave., Lakewood 11, Calif. *23S-4*
Kobert, Norman, Hunting Towers West, Alexandria, Va. *14S-4*
Koch, Edward F. Jr., 705 Cherry Drive, Aiken, S. C. *0A-1*
Koch, Norbert, Univ. of Chattanooga, Chattanooga, Tenn. *54A-1*
Koch, Robert H., 6771 Ash Ave., Gary, Ind. *53A-1*
Koenig, Thomas H., 6510 Orchard Ave., Parma 29, Ohio *7A-2*
Kogan, Irving S., 141-40 84th Dr., Briarwood, Queens, N. Y. *5A-4*
Koger, Robert L., 29 Central Ave., Tullahoma, Tenn. *64AF-3*
Kohler, Robert, Rt. 6, Box 66, Pensacola, Fla. *33A-1*
Kollar, Louis E., 3616 Connecticut, Gary, Ind. *53A-1*
Konzen, R. Paul, 1941 S. 20th Ave., Broadview, Ill. *25S-4*
Koogler, David M., c/o Braden Copper Co., Sewell, Chile, S. A. *0A-3*
Kopp, Edgar W., Univ. of Fla., Dept. of Ind. Engr., Gainesville, Fla. *27S-4*
Kopriva, Paul, Wafren Tool Corp., Griswold St., Ext., Warren, Ohio *24AF-3*
Korin, Samuel B., 7 Muldowney Circle, Apt. D., Poughkeepsie, N. Y. *0A-1*
Kormos, Lt. William, Hq. AMC, Box 1182, Wright-Patterson AFB, Ohio *2A-2*
Korn, K. Theodore, 183 N. Portage Path, Akron 3, Ohio *52S-3*
Korte, Herman R., 4808 S. Wayne, Ft. Wayne, Ind. *34S-3*
Koslow, Barton S., 3040 Edwin Ave., Ft. Lee, N. J. *5A-2*
Kotal, J. Russell, 2841 W. 84th St., Chicago 29, Ill. *25S-4*
Kotek, John, 2 Refuge St., Pittsburgh 33, Pa. *3A-3*
Koteles, John V., 2802 E. 120 St., Cleveland, Ohio *7A-2*
Koth, George F., Lenkurt Electric Co., San Carlos, Calif. *37S-4*
Kotson, Stephen, 119 Laurel Ave., Binghamton, N. Y. *48A-1*
Kovac, Victor B., 2503 Camille Dr., Columbus, Ga. *0A-1*
Kowalski, Raymond A., 72 W. Rockland St., Philadelphia 44, Pa. *31A-2*
Kraemer, Henry C., c/o Doughboy Industries, New Richmond, Wisc. *38A-2*
Kraig, Harry J., Ernst & Ernst, 510 S. Spring St., Los Angeles 13, Calif. *23S-4*
Kraker, Ernest M., 1732 N.W. 29, Oklahoma City, Okla. *57A-1*
Krall, Francis M., 3323 So. Harrison St., Ft. Wayne, Ind. *34A-1*
Kralles, Nicholas, 362 University Ave., Rochester, N. Y. *44A-2*
Kramer, Charles E., 2061 Crestview Court, Lafayette, Ind. *35S-4*
Kramer, Milton A., 3115 Georgetown, Houston, Texas *22A-1*
Krantz, J. Edward, 2506 B. Wetheriel St., Chester, Pa. *31S-4*
Krapf, Robert C., 1614 Branson Ave., Knoxville 17, Tenn. *11A-2*
Krasnow, Howard S., 62 Neillian Way, Bedford, Mass. *30A-2*
Krasovec, Frank M., 1535 S. Franklin St., Denver 10, Colo. *32A-1*
Krause, Robert H., 47-11 260 St., Great Neck, N. Y. *5A-2*
Krecek, Charles E., Aluminum Co. of America, East State St., Lafayette, Ind. *35A-2*
Kreger, Ralph E., 19165 Appoline Ave., Detroit 35, Mich. *47S-4*
Kreindel, Burton, 134-39 Blossom Ave., Flushing 55, L. I., N. Y. *5A-2*
Krejny, Jerry, Republic Steel Corp., 3100 E. 45th St., Cleveland 27, Ohio *7AF-4*
Krenek, George W., 1243 Alwil Dr., Cincinnati 15, Ohio *8A-2*
Krepinsky, Rudolph, 2010 St. Louis St., Ville St. Laurent, Quebec, Canada *0S-3*
Kreske, Malcolm M., 3330 Anawanda Ave., Columbus, Ohio *1S-4*
Kretzmann, Theodore A., 801 Harding Ave., Lancaster, Ohio *1A-4*
Krewson, Ralph W., Offatt Rd., Box 481, Randallstown, Md. *42S-4*
Krick, Edward V., Sibley School of Mech. Engr., Cornell Univ. Ithaca, N. Y. *48S-3*
Krisher, Patterson, 713 Gore, Lawton, Okla. *0A-1*
Krishnan, N. L., Methods Engineer, Bharat Electronics Ltd., Jalahalli P.O., Bangalore 3, India *4A-S*
Krista, Albert A., Sales Engr., Boldt Machine & Tool, 16 W. 12 St., Erie, Pa. *51A-2*
Kritzler, Aaron F., Binyamina, Israel *0A-1*
Kroeger, George R., 901 E. Chapman, Fullerton, Calif. *23A-1*
Kromer, Arthur P., 1450 Channing Ave., Palo Alto, Calif. *37S-4*
Kromp, Carl M., 1543 N.E. 148th St., North Miami, Fla. *40A-1*
Kruger, Bernard E., 42-17 E. 187 St., Cleveland, Ohio *7A-2*
Kruger, Thomas A., c/o Firestone International Co., 1200 Firestone Parkway, Akron 17, Ohio *52A-1*
Krummenacher, Donald P., 9718 Duluth Dr., St. Louis 15, Mo. *16A-1*
Kruse, Heinz W., Maint. Div., Bur. of Yards & Docks, Washington, D. C. *14A-2*
Krutsch, Kenneth E., A. O. Smith, Corp., 3533 N. 27th St., Milwaukee 1, Wisc. *45S-4*
Kuebler, Prof. Alfred A., Rutgers Univ., College of Engr., New Brunswick, N. J. *0S-3*
Kuers, Marvin M., 3211 Lockmoor Lane, Dallas 20, Texas *10A-3*
Kuhaneck, Bernard A., 41 Burroughs Dr., Snyder 21, N. Y. *49A-1*
Kuhn, Thomas A., 3505 Poe Ave., Cleveland 9, Ohio *7A-2*
Kukel, John, 8345 Hayvenhurst Ave., Sepulveda, Calif. *23A-3*
Kukula, Chester F., Firestone Tire & Rubber Co., Plant II, Akron, Ohio *52A-1*
Kullander, Donald E., Winding Lane, Norwalk, Conn. *5A-2*
Kummer, James A., 1518 Waverly Rd., Kingsport, Tenn. *17A-1*
Kumpe, James H., 506 "A" St. N.W., Bentonville, Ark. *0A-1*
Kunke, William S., 14812 E. Bora Dr., La Mirada, Calif. *23A-1*
Kunzler, Eugene D., Box 226, Rt. 1, Woodhaven Rd., Atlantic Highlands, N. J. *61S-4*
Kurzen, Roger F., 1706 Spring Ave. N.E., Canton 4, Ohio *19S-3*
Kutsch, Hilbert F., 7901 Jackson Park Blvd., Wauwatosa 13, Wisc. *45S-4*
Kuzma, Casimir J., 3744 So. Rutland Ave., St. Francis 7, Wisc. *45A-2*
Kwast, Chester Z., 107 Maple Lane, Oak Ridge, Tenn. *11A-2*
Kyle, Robert J., 1912 McConnell Dr., Decatur, Ga. *6A-2*

Labate, Lawrence J., 3128 Finlaw Ave., Pennsauken, N. J. *31A-2*
Lacey, Edward B., 492 E. Big Bend Rd., Webster Groves 19, Mo. *16A-1*
Laffer, Harry, 1064 Ward Ave., New York 72, N. Y. *5A-2*
LaForce, R. Sidney, 465 Garfield, Struthers, Ohio *24AF-3*
LaForge, Prof. Robert M., Univ. of Tennessee, Knoxville, Tenn. *11S-4*
LaGrone, Albert C., 4021 Fizer Ave., Memphis 11, Tenn. *28AF-4*
Lain, William H., 211 Dunbar, Ft. Wayne 5, Ind. *34S-3*
Laitala, Prof. Everett, Mech. Engr. Dept., Case Inst. of Tech., Cleveland, Ohio *7S-4*
Lake, Calvin B., 1917 1st Ave., Seattle, Wash. *20S-4*
Lake, Charles W. Jr., 420 S. Stone Ave., LaGrange, Ill. *25S-4*
Lake, Robert F., Lansdale Tube Co., Church Rd., Lansdale, Pa. *31S-4*
Lakshminarayan, S. T., No. 9 Cross Rd. 2, T.C. Colony, Kadma, Jamshedpur 5, India *4S-S*

Lambert, Robert W., 104 Joyce Ave., Chattanooga 5, Tenn. *54A-1*
Lamborn, Norman E., 522 Edwards, Louisville, Ohio *19A-1*
Lambron, Fred H., 6190 Joyce Lane, Cincinnati, Ohio *8A-2*
Lamm, Earl S., 445 E. 14th St., New York 9, N. Y. *58-4*
Lander, Lawrence C. Jr., 312 Marquette, Flint 4, Mich. *68-3*
Landis, Harry D. Jr., Apt. 3E, 57 W. 84th St., New York 24, N. Y. *58-4*
Landrum, Albert E., Rt. 1, Box 250, American Fork, Utah *56S-4*
Landry, William G., L.O.F. Glass Fibers Co., 1810 Madison Ave., Toledo 1, Ohio *36S-3*
Lang, C. Robert, 53 Hurlburt Ave., Akron 3, Ohio *52A-1*
Lang, Willard A., 442 W. Mariposa Dr., San Antonio 12, Texas *39AF-4*
Langendoen, John M., 6428 Kenwick, Ft. Worth 16, Texas *10A-1*
Langer, Martin G., 686 Empire Blvd., Brooklyn 13, N. Y. *5A-4*
Langford, Mrs. Ruby S., 325 King St., Port Chester 51, N. Y. *5A-2*
Lanna, A. August II, 35 Alexander Ave., Upper Montclair, N. J. *58-4*
Lannen, Nolan J., 4228 Vine St., Cincinnati 17, Ohio *8A-2*
Laputz, John, 19917 Stagg, Conoga Park, Calif. *23A-1*
La Paro, Anthony T., 1125 S. 74 St., Milwaukee 14, Wisc. *45A-2*
LaRobardier, Lamont M., 2 Greenway Ct., Closter, N. J. *61S-4*
Larrick, Carl W., 8659 Monsanta Dr., Cincinnati 31, O. *8A-2*
Larsen, Donald, Columbia Iron Mining Co., P.O. Box 851, Cedar City, Utah *50A-2*
Larson, Alfred J., Chicago Bridge & Iron Co., P.O. Box 687, Salt Lake City, Utah *50S-4*
Larson, John C., 1818 Downington Ave., Salt Lake City, Utah *50A-2*
Larson, Robert A., 12015 Sylvester St., Los Angeles 66, Calif. *23A-1*
Larson, William J., 2647 Orchard Rd., Canton 9, Ohio *19S-3*
Lashbrook, Thomas S., 5800 Balboa Dr., Oakland 11, Calif. *12S-4*
Lasher, Robert W., 1900 Tilden Ave., Rt. 1, New Hartford, N. Y. *68-3*
Laskey, Eugene T., 100 Wendy Road, Trumbull, Conn. *5A-2*
Lasko, Burt B., Emerson Electric Mfg. Co., 8100 Florissant Ave., Station 496, St. Louis 21, Mo. *16A-1*
Lasley, Robert A., 3406 106, Bellevue, Wash. *20A-2*
Lastra, Frank T., 1736 Grinnell Terr., Winter Park, Fla. *0A-1*
Laucks, Byrl V., The Raymond Corp., Greene, N. Y. *48A-1*
Laursen, Milton P., 7504 Eureka Ave., El Cerrito, Calif. *12S-4*
Lauterbach, Edward G., 4733 W. Montana St., Chicago 39, Ill. *25A-1*
Laverdiere, Robert A., 150 7 St., Leominster, Mass. *0A-1*
Lavin, Bennet B., 7301 S. Yates Ave., Chicago, Ill. *25A-1*
Law, R. Eugene, P.O. Box 8, Mentor, Tenn. *11A-2*
Lawrence, Herbert L., 1117 Mahantongo St., Pottsville, Pa. *68-3*
Lawrence, William A., 1021 Chelsea Ave., Dayton 10, Ohio *28-4*
Lawson, Mrs. Ralph M., 2418 Kelly St., Hayward, Calif. *12S-4*
Lawson, Raymond P., 407 Aspen St., Hoffman Estate, Roselle Ill. *25A-1*
Lawson, Sidney, 197 Floyd St., Belleville, N. J. *61A-2*
Laxon Roberts, William T., 214 B W 37th Ave., San Mateo, Calif. *12S-4*
Lay, John W. Jr., Mechanical Handling Systems, 104 Fairview Bldg., Decatur, Ga. *68-4*
Layesman, Frederick S., 9503 Belair Rd., Baltimore 6, Md. Md. *42AF-4*
Layman, Carl W., 415 Pasadena Blvd., Toledo 12, Ohio *36A-1*
Layman, H. Travis, 3508 Sleeper, Waco, Texas *0A-1*
Laymon, John L., Rt. 8, Lower Huntington Rd., Ft. Wayne, Ind. *34A-1*
Lays, Edwin P., 1106 West St., Utica, N. Y. *0A-1*
Lazarowitz, Marvin, 2070 Arthur Ave., New York 57, N. Y. *5A-2*
Lazarus, Irwin P., Ordnance Management Engr., Training Program, Rock Island Arsenal, Rock Island, Ill. *46S-4*
Leach, Floyd H. Jr., 150 Elena Dr., Walnut Creek, Calif. *12A-1*
Leaper, William D., 632 Kanawha, Blvd. W., Charleston 2, W. Va. *58A-2*
Leard, Terry S., 1902 N. Union, Shawnee, Okla. *57A-1*
LeBrock, Russell Jr., 300 Waite St., Gary Ind. *53S-3*
Leche, Arthur W., 5307 Halsey Court, Louisville, Ky. *18A-1*
Lederer, H. Alex, 27 Gordon St., Tel Aviv, Israel *0A-1*
Lee, Charles J., 233 Quincy, Apt. No. 1, Hinsdale, Ill. *25S-4*
Lee, George D., Process Planning Div., Research Laboratories, Swift & Co., Chicago 9, Ill. *25A-1*
Lee, Hollis W., U. S. Post Office, Regional Office, 870 Market St., San Francisco 2, Calif. *37AF-3*
Lee, John L. Jr., 1509 Aberdeen St., Baton Rouge, La. *41A-1*
Lee, Louis Terry, 3237 W. Eastwood Ave., Chicago, Ill. *25A-1*
Lee, Robert E., 1513 Carolina Ave., Kingsport, Tenn. *17A-1*
Lee, Robert M., U. S. Steel Corp., Gary Sheet & Tin Mill, Gary, Ind. *53S-3*
Lee, Sherman H., 210 E. Meadow Dr., Palo Alto, Calif. *37S-4*
Lee, Theodore T., 2231 Hawthorne Ave., Del Paso Heights, Calif. *43A-2*
Leeds, David R., 5 Ford Court, Bergenfield, N. J. *5A-2*
Leeper, Bruce F., 1346 Barrett Ct. N.W., Canton 3, Ohio *19A-3*
Legg, Burton F., Bristol Center, N. Y. *0A-1*
Legleu, J. Kenneth, 3866 Chippewa St., Baton Rouge, La. *41A-1*
Lehoczky, Paul N., 115 W. Royal Forest Blvd., Columbus 14, Ohio *18-4*
Lehrer, Prof. Robert N., 2052 Brookview Drive, N.W., Atlanta, Ga. *68-4*
Leibrock, Edward J., Rt. 1, River Rd., Waterville, Ohio *36S-3*
Leibson, Marvin E., 20530 Huntington, Detroit 19, Mich. *47A-2*
Leister, John T., 26500 Euclid Ave., Euclid 32, Ohio *7A-2*
Leithauser, William B., 327 Dartmouth Dr., Tyler, Texas *60S-4*
Lejk, 2/Lt. Richard A., A03051280, 42nd Supply Sqdn., Loring AFB, Maine *0A-1*
Leland, Frank C., Wells Mfg. Corp., 2-24 S. Brooke St., Fond du Lac, Wisc. *0A-1*
LeMaster, LaVerne C., 19 W. 12th St., Nitro, W. Va. *58A-2*
Lenarz, Larry R., 1629 Colerick, Ft. Wayne, Ind. *34A-1*
Lenkey, William J., Thompson Products Inc., Room 229, 23555 Euclid Ave., Cleveland 17, Ohio *7A-2*
Lenthe, Charles F., 348 Ripplewood Dr., Rochester 16, N. Y. *44A-2*
Lentz, Bruce A., 1792 Grover Lane, Salt Lake City 17, Utah *50AF-4*
Lentz, Paul A., 360 Greenway Dr., Pittsburgh 35, Pa. *3A-3*
Leo, Francis P., 616 Copley St., Elmira, N. Y. *48A-1*
Lepper, F. David, 201 Rice's Mill Rd., Wyncote, Pa. *31A-2*
LeSage, Robert H., 4942 Holly Hills, St. Louis 9, Mo. *16A-1*
Lescault, Edmond G., 506 Baylor Rd., Elmira, N. Y. *48S-3*
Lesinski, Chester T., 4410 Gamma Ave., Cleveland 13, Ohio *7A-2*
Leslie, Cecil C., Continental Steel Corp., 1109 S. Main St., Kokomo, Ind. *35S-4*
Leslie, Charles E., 1318 Dalton St., Alcoa, Tenn. *11A-2*
Leslie, Leroy L., 950 Springdale St., Memphis 8, Tenn. *28A-2*
Lesperance, Dr. Jean P., 438 Cadagua, Coral Gables, Fla. *40S-3*
Lesser, Dr. Arthur Jr., Head Dept. of Ind. Engr., Stevens Inst. of Tech., Hoboken, N. J. *61S-4*
Lessing, Allan I., 2622 Thurmont Rd., Akron, Ohio *52S-3*
Lessinger, Charles A., 317 Beattie St., Syracuse 3, N. Y. *13S-4*
Lester, Wm. A. Jr., 900 Hensley St., Arlington, Texas *10A-1*
Letbetter, Dudley G., 435 Larry Dr., Longview, Texas *60A-2*
Levy, Alan J., 75 Central Park West, New York 23, N. Y. *58-4*
Lewis, Edwin A., 8591 Cincinnati Columbus Rd., Sharonville, Ohio *8A-2*
Lewis, Floyd A., c/o Charles E. Schuler Co., Newark, Ohio *18-4*
Lewis, Freeman C., 32 Woodview Dr., Rochester 11, N. Y. *44A-2*
Lewis, Karl B., Republic Steel Corp., Pine St., Warren, Ohio *24A-1*
Lewis, Orville R., Rt. 2, Windfall, Ind. *35A-2*
Lewis, Philip C., "Barnaby", St. Gile's Hill, Winchester, U.K. *68-3*
Leyon, John R., 6 Clifton Rd., Wellesley Hills, Mass. *30A-2*
Leyshock, Raymond F., 1530 W. Houston, Fullerton, Calif. *23A-1*
L'heureux, David C., 1103 S. Greens Lake Rd., Chattanooga, Tenn. *54S-3*
Liberto, Frank S., 328 Bedford Ave., Buffalo 16, N. Y. *49A-1*
Liddie, Donald F., Gen. Ind. Engr. Dept., Corning Glass Works, Corning, N. Y. *48A-1*
Lidington, Bob W., 4809 N. 34th Dr., Phoenix, Ariz. *68-3*

Lieberman, Gerald J., Ass't Prof. Ind. Engr., Stanford University, Stanford, Calif. *37A-1*
Lill, Francis J., Apt. 3, Robinwood Apts., 23616 U. S. 99, Edmonds, Wash. *20A-2*
Limpinsel, Wm., 217 Bond St., Niles, Mich. *6A-1*
Lincoln, Stanley R., 708½ North St., Endicott, N. Y. *48A-1*
Linda, Arvey H., 91 Glen Rd., Jamaica Plain 30, Mass. *30S-4*
Linden, James R., 741 E. 104 Pl., Chicago 28, Ill. *25A-1*
Linder, David W., 4251 41st St., San Diego 5, Calif. *29AF-4*
Lindholm, Perry D., Colgate-Palmolive Co., 300 Park Ave., New York, N. Y. *58-4*
Lindhurst, Raymond H., 190 Parkwood Ave., Kenmore 17, N. Y. *49AF-3*
Lindsay, Lennox H., 550 Walnut Dr., Hendersonville, N. C. *08-3*
Lindsey, Mason B., Nat'l Vulcanized Fiber Co., Box 311, Wilmington 99, Del. *31S-4*
Lingenfelser, George, 10 Lee St., Savannah, Ga. *26A-1*
Link, Cord H. Jr., Director of Engr. Office, Aro, Inc., Tullaboma, Tenn. *64A-1*
Linn, Dwight E., Rt. 1, Williamsport, Ohio *1A-2*
Linthicum, Dabney O., 93 Pinetree Ave., Savannah, Ga. *26A-1*
Lipinski, Zygmunt J., 7 Ferry St., Trenton 10, N. J. *31A-2*
Lippincott, Don H., Champion Paper & Fibre Co., Pasadena, Texas *22A-1*
Lisse, Allan, 7101 Minna Rd., Baltimore 7, Md. *42A-2*
Lissner, James, 4910 E. 85th, Seattle 15, Wash. *20A-2*
Litterer, Joseph A., Rm. 410, David Kinley Hall, Univ. of Illinois, Urbana, Ill. *6A-1*
Little, Harry W., 1015 Eden Ave., S.E., Atlanta, Ga. *6A-2*
Little, John J., Hammermill Paper Co., East Lake Rd., Erie, Pa. *51S-4*
Litton, Willard W., 8810 Stansbury Ave., Van Nuys, Calif. *23A-1*
Livingston, Robert T., 88 Morningside Dr., New York 27, N. Y. *58-4*
Llewellyn, Nelson L., 1722 Mahoning N.W., Warren, Ohio *24A-1*
Llewellyn, Robert W., N. C. State College of Agri. & Engr. of the Univ. of N. C., Raleigh, N. C. *21S-4*
Lloyd, Joseph B., 244 19th Ave. No., Hopkins, Minn. *38A-2*
Lloyd, William C., 405 Oakland, Villa Park, Ill. *25A-1*
Lloyd, Winans D. Jr., 9355 Donna Dr., Baton Rouge, La. *41AF-3*
Locke, John H., 35 S. Broadway, Apt. C-1, Irvington, N. Y. *5A-2*
Lockrem, Carl E., 3453 N. St. Clair St., Racine, Wisc. *45S-4*
Lockwood, Robert W., 14100 E. Prichard, Puente, Calif. *23S-4*
Lodwick, Llewelyn N., P.O. Box 510, Geneva, Utah *50A-2*
Loeffler, Romain E., 4856 Leamington, Toledo 13, Ohio *36A-1*
Logan, Hall A., 506 Cunningham St., Corpus Christi, Texas *6A-1*
Logue, William E., 607 Kinsman St. N.W., Warren, Ohio *24A-1*
Lohmann, M. R., Dept. I.E., Oklahoma A. & M., Stillwater, Okla. *15S-3*
Loney, Robert W., 1355 Utica, Denver, Colo. *32A-1*
Long, C. Richard, 506 Service Ave., Sharon, Pa. *24A-1*
Long, Daniel J., 816 Russell St., Bristol, Va. *17A-1*
Long, David D. Jr., 935 Stovall Blvd. N.E., Atlanta, Ga. *6S-4*
Long, Gregory J., 1233 12th Ave., Moline, Ill. *46A-2*
Long, Maurice V., 277 Hans Ave., Mt. View, Calif. *37A-1*
Long, Veron E., 763 Kettering St., Lancaster, Calif. *23A-1*
Longley, Samuel W., 2616 Oak Ave., Manhattan Beach, Calif. *23S-4*
Longyear, Nevin H., 27 E. Parkway, Victor, N. Y. *6A-1*
Looney, Jack S., Coosa River Newsprint Co., Coosa Pines, Ala. *9A-2*
Loopo, 2/Lt. Lawrence P., WADC, Area B., Box 7868, Wright Patterson AFB, Ohio *2A-2*
Lopez, Michael, 699 Ashton Ave., Palo Alto, Calif. *37AF-3*
Lopp, Richard, 283 Daphne Way, Palo Alto, Calif. *37A-1*
Lorcek, Alvin, 223 Oak Ave., Baltimore 8, Md. *42A-2*
Lorenzo, Louis M., 38-24 Brookside Ave., Fairlawn, N. J. *61A-2*
Loscher, Elna M., 90 Riverside Dr., New York 24, N. Y. *5A-2*
Lott, Sterns B. Jr., Kimberly Clark Corp., P.O. Box 4666, Memphis, Tenn. *28S-4*
Love, Charles H., 120 E. Bowman Ave., Dayton 9, Ohio *2A-2*
Love, Perry J., 221 E. St., S.E., Auburn, Wash. *20AF-3*
Loveland, James W., 33 Hoover Rd., Rochester 17, N. Y. *44A-2*
Lovrich, John, 20C-1, Sheridan Village, Schenectady 8, N. Y. *0A-3*
Lowden, John E., 18 Joliet St., Laconia, N. H. *63A-1*
Lowe, Jay S. Jr., 3016½ N. High St., Columbus, Ohio *1A-4*
Lowe, John R., Line Material Co., 1700 Vanderbilt Rd., Birmingham, Ala. *9AF-4*
Lowe, Robert A., Rt. 1, Hanna Rd., Willoughby, Ohio *7S-4*
Loy, William E., 233 Cassel Dr., Kingsport, Tenn. *17A-1*
Lubin, John F., Univ. of Penna., Wharton School, Philadelphia 4, Pa. *31S-4*
Lubin, Peter M., 829 Hillcrest Rd., Orange, Conn. *0A-1*
Lucas, Christian G., Sharon Steel Corp., Roemer Works, Farrell, Pa. *24S-3*
Lucas, Jack G., 2137 Clearview, Abington, Pa. *31A-2*
Lucas, Lamar, 109 Rose Pl., Neptune Beach, Fla. *27A-2*
Lucas, Louis J., 554 S. Summit, Ft. Worth, Texas *10S-3*
Luckey, Glenn F., 145 W. Water St., Painted Post, N. Y. *48S-3*
Luckhardt, Philip G., 86 Grandview Ave., Rye, N. Y. *5A-2*
Lucy, J. Herbert, 3336 Ridgecrest, Memphis 7, Tenn. *28S-4*
Ludemann, John M., 56 Kenmar Dr., Brookside Park, Newark, Del. *0A-1*
Ludmer, Henry, 134 Peach St., Park Forest, Ill. *25S-4*
Ludwig, Herbert G., 2606 Linwood, Royal Oak, Mich. *47S-4*
Ludwig, Raymond C., 3635 W. 120th St., Cleveland 11, Ohio *7A-2*
Lufkin, Walter J., 1829 Clayton Rd., Abington, Pa. *31A-2*
Luftig, Edward B., Scardsale Manor Apts., Garth Rd., 10 L, Scarsdale, N. Y. *5A-2*
Lumsden, G. H. (2nd North) 323 Clara Ave., St. Louis 12, Mo. *16S-3*
Lund, C. Edward, 1112 11th St., Santa Monica, Calif. *23S-4*
Lundberg, Robert H., 824 Misty Glen Lane, Dallas 32, Texas *10S-3*
Lundstrom, Carl W., Link Aviation Inc., Ind. Engr. Dept., Binghamton, N. Y. *48S-3*
Lurie, William, Arwood Precision Casting Corp., 70 Washington St., Brooklyn 1, N. Y. *5S-4*
Luther, George L., 203 Front St., Owego, N. Y. *48A-1*
Luther, Rodney F., 7980 Cherrystone Ave., Van Nuys, Calif. *23AF-3*
Lynam, William A., Case Institute of Tech., 10900 Euclid Ave., Cleveland 6, Ohio *7S-4*
Lynas, Robert M., Thompson Products Inc., 7881 Conant Ave., Detroit 11, Mich. *47A-2*
Lynch, Edward P. Jr., National Carbon Co., Bennington, Vt. *63S-3*
Lynch, Herbert A., 435 Wonderwood Dr., Charlotte 7, N. C. *21S-4*
Lynch, John F., 46 Semont Rd., Dorchester 24, Mass. *30A-2*
Lynch, Robert A., 1320 Irving St., Winston Salem, N. C. *21A-4*
Lynch, William H., United Wallpaper Inc., 1034 S. Kostner Ave., Chicago 24, Ill. *25S-4*
Lyndon, Charles H., 268 Alhambra Way, Akron, Ohio *52A-1*
Lynn, Bernard R., 916 E. Gerhart, Kokomo, Ind. *35AF-4*
Lynn, William N., Western Printing & Litho. Co., 1310 S. Spring St., St. Louis, Mo. *16AF-3*
Lyons, Lawrence M., Conley Frog & Switch Co., P.O. Box 3188, Memphis 9, Tenn. *28A-2*

McAndrews, William J., 1190 Locust Ave., Anaheim, Calif. *23A-3*
McCabe, Harry F., 4409 Jefferson St., Gary, Ind. *53A-1*
McCampbell, H. C., 31 S. Sylvan, Columbus 4, Ohio *1S-4*
McCann, James E., 461 W. Orangethorpe Ave., Fullerton, Calif. *23S-4*
McCarthy, Alfred H., % Creole Petroleum Corp., Las Piedras Falcon, Venezuela, S. A. *0A-1*
McCarthy, Joseph W., Sears Roebuck & Co., Dept. 817, Chicago 7, Ill. *25S-4*
McCarthy, Siebelt M. Jr., 325 W. Huisache, Apt. 5, San Antonio, Tex. *39AF-4*
McCartney, James E., 30739 Sheridan, Garden City, Mich. *47A-2*
McCauley, Bruce G., V. P. Finance, Shand & Jurs Co., 8th and Carleton Sts., Berkeley 10, Calif. *12S-4*
McCauley, James A., 157 Hall Ave., Warren, Ohio *24A-1*
McClain, Rollin T., 201 Locke Ave. S.E., Massillon, Ohio *19S-3*

McClain, William R., Bryant Div. Carrier Corp., Duncan St., Tyler, Texas *60A-2*
McCling, Kenneth C., American Air Filter Co. Inc., Moline, Ill. *46A-2*
McClurd, Samuel R. 2nd, 52 Poplar Ct., Snyder 21, N. Y. *49A-1*
McClure, Guy Victor, Rt. 3, Box 236, Edmond, Okla. *57A-1*
McClure, James C. Jr., 815 Kingston Ave., Racine, Wisc. *45A-2*
McCormack, James S., 312 Watauga Ave., Corning, N. Y. *48A-1*
McCormack, John D., 116 Sylvan Rd., Walnut Creek, Calif. *12A-1*
McCormick, George E., 1345 Nightingale Rd., Louisville 13, Ky. *18A-1*
McCormick, James J., Sears Roebuck & Co., Dept. 817, 925 S. Homan Ave., Chicago 7, Ill. *25S-4*
McCormick Robert L., P.O. Box 987, Louisville 1, Ky. *18A-1*
McCormick, Ross W., 2511 Elizabeth St., Lafayette, Ind. *35A-2*
McCoy, Allen W., 1518 Belmead Lane, Irving, Texas *10A-1*
McCoy, William B., 1219 24th St. N.E., Canton 4, Ohio *19S-3*
McCrady, Lt. Edward B., Jr., OMS Box 498, Greenville AFB, Miss. *0A-1*
McCredie, Major C. M., Hq. ARTC, Scott AFB, Ill. *16A-1*
McCrone, Mark C., American Welding & Mfg. Co., Dietz Rd., Warren, O. *24A-1*
McCulskey, Edward, 80 Baker St., Johnson City, N. Y. *48A-1*
McCurdy, Emmett A. Jr., 849 Newman Dr., So. San Francisco, Calif. *37A-1*
McCutchan, Melvin A., 722 Jefferson, N.E., Albuquerque, N. M. *59AF-3*
McDermott, Ens. Michael P. Jr., USS St. Paul, CA 73 % FPO, San Francisco, Calif. *37A-1*
McDonald, Norman H., 1753 Embassy Dr., Jacksonville 7, Fla. *27S-4*
McDonald, Russell Wm., 25938 Highland Rd., So. Euclid 21, Ohio *7S-4*
McDonell, Alex B., Pollock Paper Corp., P.O. Box 5325, Dallas 22, Tex. *10S-3*
McDonough, James P., 2131 78th St., Jackson Heights, N. Y. *5A-2*
McDonough, Michael D., 3431 10th Pl. S.E., Washington 20, D. C. *14A-2*
McDowell, William G., 402 Old Eagle School Road, Strafford-Wayne, Penna. *31A-2*
McElrath, Gayle W., Mech. Engr. Bldg., Univ. of Minnesota Minneapolis, Minn. *38S-4*
McEvoy, James M., 71 Pennsylvania Ave., Binghamton, N. Y. *48A-1*
McFall, Theodore C., Rt. 5, Alliance, Ohio *19S-3*
McFarland, Charles D., 546 Kenmore N.E., Warren, Ohio *24S-3*
McFarlane, William J., 1397 Cranover Rd., Lyndhurst 24, Ohio *7A-2*
McGarrah, Robert E., College of Engr., Dept. of Ind. Engr., Cornell University, Ithaca, N. Y. *48S-3*
McGhan, Don K., 4425 N. Hemlock Rd., Rt. 2, Hemlock, Mich. *0A-1*
McGill, Duff S., 1308 E. 52nd, Savannah, Ga. *26S-3*
McGowan, Melvin F., Rt. 3, Box 166, Fond du Lac, Wisc. *45A-2*
McGrath, James F., International Nickel Co. Inc., Guyan River Rd., Huntington, W. Va. *58S-4*
McGrory, Robert C., 2926 Cheltenham Ave., Philadelphia 19, Pa. *31A-2*
McGuffin, Rocco F., 3376 S. Lucille, Lafayette, Calif. *12A-1*
McGuire, Dick R., 109 E. 16th St., Amarillo, Texas *0A-1*
McHenry, Robert C., Montgomery Ward Co., E. 14th St. & 29th Ave., Oakland, Calif. *12A-1*
McHose, Andre H., 14 Little Brook Rd., Fairfield, Conn. *58S-4*
McIlroy, Homer C., 8907 Los Arboles Ave. N.E., Albuquerque, N. M. *59AF-3*
McIntyre, Stanley G., S. McIntyre & Associates, Russ Bldg., San Francisco, Calif. *37S-4*
McJunkin, Hugh K. Jr., 1759 Landana Dr., Concord, Calif. *12A-1*
McKean, Prof. James P., 4481 N. Frederick Ave., Milwaukee 11, Wisc. *45S-4*
McKeand, M. L., 7042 Reseda Blvd., Reseda, Calif. *23S-4*
McKechnie, Richard G., 852 Colwell Rd., Swarthmore, Pa *31AF-4*
McKee, Wendell S., 2735 E. 45th Pl., Tulsa Okla. *15S-3*
McKee, William R., 116 W. 10th, Silver City, N. M. *59A-1*
McKelvey, Stewart D., 20001 Parkview Ave., Rocky River, Ohio *7S-4*
McKenna, Edward Allen, Schenley Distillers Inc., Alcoholic Beverages, 26 E. 6th St., Cincinnati 2, Ohio *8S-4*
McKenna, Prof. J. V., 105 Barrington Rd., Syracuse 3, N. Y. *13S-4*
McKenzie, Ralph E., 518 Elm Ave., Chula Vista, Calif. *29A-2*
McKirahan, Richard N., 5622 S. Columbia St., Tulsa 5, Okla. *15A-1*
McKittrick, J. W., 2522 122 S.E., Norwood Village, Bellevue, Wash. *37A-1*
McKnight, Selden W., 9500 Oak Ave., Orangevale, Calif. *43A-2*
McLain, John D., 915 Marye St., Fredericksburg, Va. *14A-2*
McLarney, William J., 2434 Tulip Rd., San Jose 28, Calif. *37S-4*
McLaughlin, Donald H., 8507 Truxton Ave., Los Angeles 45, Calif. *23A-1*
McLaughlin, James P., 7927 Lloyd Ave., Pittsburgh 18, Pa. *3A-1*
McLeod, Charles K., 3021 S. Douglas St., Oklahoma City 9, Okla. *57A-1*
McLeod, Robert L. Jr., 320 W. Pear St., Sumter, S. C. *0A-1*
McLernon, James W., 99 Palmer Ave., Kenmore 17, N. Y. *49A-1*
McNair, Leslie G., 2637 Denley Dr., Dallas, Texas *10A-1*
McNay, Wendell L., 438 S. East St., Crown Point, Ind. *53S-3*
McPheters, George W., Ordnance Section, Box 46, Ft. Clayton, Canal Zone *0A-1*
McQuiston, Clyde E., The Advance Foundry Co., 107 Seminary Ave., Dayton 3, Ohio *2S-4*
McSwegin, Charles E., 136 36th St. N.E., Canton 4, Ohio *19A-1*
McTague, Harry D., Columbia Geneva Steel Div., USC, P.O. Box 510, Provo, Utah *50A-2*
McTarnaghan, Hugh A., 409 Northwood Dr., Kenmore 23, N. Y. *49A-1*
McVay, Robert H., Curtis Lighting, Inc., 6135 W. 65 St., Chicago, Ill. *25S-4*
McVey, Kenneth K., The Standard Register Co., 126 Albany St., Dayton, Ohio *2A-2*
Macali, Alfred L., 821 Fifth St., New Martinsville, West Va. *38S-3*
MacBrayne, John M., Box 570, Savannah, Ga. *26S-3*
MacDonald, Raymond S., 33 Upper Dr., Hickling Heights, East Corning, N. Y. *48S-3*
MacKay, Douglas D., Pacific Pumps, Inc., 5715 Bickett St., Huntington Park, Calif. *23A-1*
MacKay, Lt. (jg) Geo. L., P.O. Box 749, Ocala, Fla. *0A-1*
MacKenzie, Horace J., Ind. Engr. Dept., Texas Tech. College, Lubbock, Texas *0A-3*
MacKenzie, Prof. John M., 4240 Vernon Ave., St. Louis Park 16, Minn. *38S-4*
MacLachlan, James C., 2314 Westover Dr., Winston-Salem, N. C. *21A-2*
MacQuarrie, Wesley E., Jr., 21 Concord St., Needham Heights, Mass. *30-A-2*
MacRae, Austin D., Jr., 6 First St., Hudson, N. H. *62S-4*
MacWilliams, H. F., Jr., 51 Miller Ave., Davisville, Pa. *31S-4*
Macy, Frederick D., 3710 Odin Court, Houston, Texas *22S-4*
Macy, Marshall E., 18855 Fremont Ave., Seattle 33, Wash. *20A-2*
Magar, Nasri D., 1125 Tower Rd., Beverly Hills, Calif. *23S-4*
Magargel, Miles E. 2219 39th St. N.W., Washington 7, D. C. *14S-4*
Magee, William J., Riegelsville, Penna. *31S-4*
Maggio, Glenn E., 71 Barrington Rd., Ridgewood, N. J. *61A-2*
Maguire, Howard S. Jr., 130 W. Kendall Dr., E. Syracuse, N. Y. *13A-2*
Mahaffey, Daniel E., Eastman Kodak Co., 4729 Miller Dr., Chamblee, Ga. *6S-4*
Mahaffey, William A. II, Rt. 4, Box 194, Jacksonville, Fla. *27A-2*
Mahan, Ronald D., 5326 Astral Ave., Jacksonville, Fla. *27A-2*
Mahaney, Howard V., 2 Redwood Dr., Florissant, Mo. *16A-1*
Maher, Paul, 2615 Genesee St., Utica 3, N. Y. *0S-3*
Maher, Thomas A., 1553 Ormandy Dr., Baton Rouge, La. *41A-1*
Maier, John F., 311 E. 162 St., Seattle 55, Wash. *20A-2*
Maiolo, Bruno A., 1387 Bronx River Ave., Bronx 72, N. Y. *5A-2*
Majeres, L. J., 2436 E. Balfour, Fullerton, Calif. *23A-1*
Major, Stephen J., 16007 Stockbridge Ave., Cleveland 28, Ohio, *7A-2*
Malbon, John F., 655 Maple St., Oxnard, Calif. *0A-1*

Malcolm, D. G., Booz Allen & Hamilton, 135 S. LaSalle, Chicago, Ill. *35S-4*
Maldonado, Gerardo E., P.O. Box 8864, San Juan, Puerto Rico *0A-1*
Malkasian, Charles, 468 Zimmermand Blvd., Kenmore, N. Y. *49AF-3*
Mallery, Robert H., R. R. Donnelley & Sons Co, Sloan St. Plant, Crawsfordsville, Ind. *35A-2*
Malone, John D., 5001 Relleum Ave., Cincinnati 38, Ohio *8S-4*
Malone, M. A., 112 Basswood Circle, So. Hills, Covington, Ky. *0A-1*
Maloney, Robert F., Apt. #3, 25 Intervine Place, Cincinnati 20, Ohio *8A-2*
Maloy, Joe B. Jr., 762 Houston St., Memphis, Tenn. *28S-4*
Mancheski, Frederick J., 308 Poplar, N.W., Canton, Ohio *19S-3*
Mandel, Daniel, 1448 Canterbury Rd., Lakewood, N. J. *61S-4*
Mandic, Walter, Link Aviation, Inc., Nowland Rd., Hillcrest, Binghamton, N. Y. *48A-1*
Manes, James, 623 McKee Ave., Monessen, Pa. *3A-1*
Mangles, Warren H., 1548 A. Santa Clara Ave., Alameda, Calif. *12S-4*
Manko, Dennis, 4870 Ross Dr., Pontiac, Mich. *47A-2*
Manning, Herbert L., Head, Dept. of Ind. Engr., Virginia Polytechnic Inst., Blacksburg, Va. *0S-3*
Manse, Otto J., 405 Brampton Dr., Dewitt 14, N. Y. *13S-4*
Mansfield, Don R., 6701 Ash Place, Gary, Ind. *53S-3*
Manske, Robert W., 8512 Virginia Circle, No., St. Louis Park, Minn. *38A-2*
Mantooth, Jess C. Jr., 219 S. Birch, Sapulpa, Okla. *15A-1*
Manttari, Otto W., 949 Greenwood Ave., N.E., Atlanta 6, Ga. *6A-2*
Maras, Chris E., 265 N. 112th St., Wauwatosa 13, Wisc. *45A-2*
Marble, James B., 1077 Blackfield Way, Mountain View, Calif. *37A-1*
Marcantognini, Joseph T., 1320 Chelsea Ave., Bethlehem, Pa. *0A-1*
Marcin, Walter J., Emerson Elec. Mfg. Co., 8100 Florissant Ave., St. Louis 21, Mo. *16S-3*
Marcis, George, 2064 Clarence Ave., Lakewood 7, Ohio *7A-2*
Marcus, Lt. Joel A., 119 Birch St., Middletown, Pa. *0A-1*
Margeson, DeForest M., I.B.M. Corp., 1701 North St., Endicott, N. Y. *48A-1*
Margeson, John D., 1202 Springdale Rd. N.E., Atlanta, Ga. *6A-2*
Margolis, Sidney O., 76-09 34 Ave., Jackson Heights 72, N. Y. *5A-2*
Margoshes, Herbert M., 34 Marion Rd., Marblehead, Mass. *30S-4*
Mariani, Eugene U., 1156 Weiner Rd., Memphis, Tenn. *28A-2*
Markowski, M. J., 18206 Windward Rd., Cleveland 19, Ohio *7S-4*
Marks, Robert J., A. O. Smith Corp., 3533 N. 27th St., Milwaukee, Wisconsin *45S-4*
Marlo, George J., 175 Seneca Parkway, Rochester 4, N. Y. *44A-2*
Marra, Joseph G., 256 Hickory St., Washington Twp., Westwood, N. J. *5A-2*
Marrinan, William K., Route #1, St. Paul 11, Minn. *38A-2*
Marsey, 2/Lt. Robert J., 537 E. Indian Dr., Midwest City, Okla. *57A-2*
Marsh, Dallas M., 27 E. Parrott St., Mt. Vernon, Ohio *1A-2*
Marshall, Clayton F., 435 Cleveland Ave., Ashland, Ohio *0S-3*
Marshall, George L. Jr., 15534 E. Dittmar Dr., Whittier, Calif. *23A-1*
Martenson, Herbert E., Box 232, Stockholm, N. J. *61A-2*
Marthey, Louis G., 316 Union St., Crawfordsville, Ind. *35A-2*
Martin, Charles E., Rt. #5, Old Lexington Rd., Winston Salem, N. C. *21A-2*
Martin, George H., 123 Forest St., Danvers, Mass. *30A-2*
Martin, Gerald W., 9711 W. 16th St., St. Louis Park 16, Minn. *38A-2*
Martin, Homer E., 228 Sandhurst Dr., Dayton 5, Ohio *2S-4*
Martin, Jay W., 27915 Baldwin St., Hayward, Calif. *12AF-3*
Martin, John Richard, 178 Loveman Ave., Worthington, Ohio *1A-4*
Martin, Joseph B., Lone Star Steel Co., Lone Star, Texas *60A-2*
Martin, Kenneth W., 1686 Providence Ave., Schenectady, N. Y. *0A-1*
Martin, Ned Jr., 1234 Sackett Ave., Cuyahoga Falls, Ohio *52A-3*
Martin, Pelham A., National Carbon Co., P.O. Box 941, Asheboro N. C. *21A-2*
Martin, Robert H., 1035 Pine St., San Francisco 9, Calif. *12S-4*
Martin, Robert J. (Ensign USNR), USS Kidd, (DD661), % FPO San Francisco, Calif. *0A-1*
Martin, Ronald A., 139 Blenheim Rd., Columbus 14, Ohio *1A-2*
Martin, William L., 3114-42nd Place, Albuquerque, N. M. *59A-1*
Martin, Wyatt L. Jr., Box 158, Winston-Salem, N. C. *21A-2*
Martino, Peter V. Jr., 99-31 66 Ave., Forest Hills, L. I., N. Y. *5A-2*
Martinson, Prof. E. P., Dept. of Ind. Engr., University of Florida, Gainesville, Fla. *27S-4*
Martzloff, Thomas H., % McKinsey & Co., Russ Bldg., 235 Montgomery St., San Francisco 4, Calif. *37A-1*
Marum, Harald, 25 S. Calumet Ave., Hastings on Hudson, N. Y. *5S-4*
Marx, John B., 1300 Cotton St., Menlo Park, Calif. *37S-4*
Marye, Robert, 1044 Daun St., Signal Mountain, Tenn. *54S-3*
Masich, Edward J., 23 Corbalis Place, Yonkers, N. Y. *5AF-4*
Maslousky, Paul E., 144 Valley St., Exeter, Pa. *0A-1*
Mason, Carrington, P.O. Box 1188, Houston 1, Texas *22S-4*
Mason, Gardner L., 7900 Chastain Ave., Reseda, Calif. *23A-1*
Mason, Harold, 52 Brighton 2nd Lane, Brooklyn 35, N. Y. *5A-2*
Masquelier, Leon A., 820 N. Clementine, Anaheim, Calif. *23S-4*
Masson, Daniel John, 900 S. Avenue "C", Washington, Iowa, *0A-1*
Masters, Lawrence T., 5 Madill Court, Antioch, Calif. *12A-1*
Masters, Robert H., The Ohio Power Co., Canton, Ohio *19S-3*
Mastrangelo, Paul L., 33259 Guilbert Dr., Willoughby, Ohio *7A-2*
Matanin, Harold R., R R. #4, Union City, Ind. *0A-1*
Mathews, Harold H. Jr., R. J. Reynolds Tobacco Co., Ind. Engr. Dept., Winston Salem, N. C. *21S-4*
Mathews, Kenneth J., Cleveland Graphite Bronze, 17000 St. Clair Ave., Cleveland, Ohio *7S-4*
Mathewson, M. H., I. E. Dept., International Minerals & Chemicals, Corp., 20 N. Wacker Dr., Chicago 6, Ill. *25S-4*
Matosoff, Henry, 322 N. Kings Rd., Los Angeles, Calif. *23A-1*
Matson, William J., 411 27th Ave., San Mateo, Calif. *37A-1*
Matthew, Theodore B., 225 Second St., High Spire, Pa. *0A-1*
Matthews, Ansel H., 1204 Holland St., Cumberland, Md. *0S-3*
Matthews, Don Q. 2536 E. 14 St., Tulsa 4, Okla. *15A-1*
Matthews, Walter D., 937 Second St. N.E., Massillon, Ohio *19A-1*
Matthews, William C., 154 Broad St., Charleston 4, S. C. *0A-1*
Matthews, William C., 104 N. Roosevelt Ave., Endicott, N. Y. *48A-1*
Mattis, Frank C. Jr., 3013 Junietta, Cincinnati, Ohio *8S-4*
Mattlage, Robert F., 6776 Blakemore St., Philadelphia 19, Pa. *31A-2*
Matuch, George Jr., 5415 Gable Lane, Arlington, Fla. *27A-2*
Matus, Joseph A., 1404 Churchill Rd., Lyndhurst 24, Ohio *7A-2*
Matzner, Ensign Rudolph Jr., USS Dextrous (MSF-341), % FPO, San Francisco, Calif. *0A-1*
Maurer, Henry L., 1630 W. 7th Ave., Gary, Ind. *53S-3*
Maurer, John L., R #1, Town Line Rd., North Madison, Ohio *7A-2*
Mause, Clifford H., 5020 West Blvd., Canton 9, Ohio *19S-3*
Maxwell, C. Herbert, Box 550, R #1, Masury, Ohio *24S-3*
Maxwell, George A., 625 Market St., San Francisco, Calif. *12S-4*
Maxwell, Herris M., 103 Diamond Blvd., Johnstown, Pa. *0S-3*
Maxwell, Ralph Jr., 312 River Oaks Dr., New Orleans 14, La. *0S-3*
Maxwell, Warren A., 3535 Dayton Ave., Louisville 7, Ky. *18S-3*
Maxwell, William J., 539 Wagner Rd., Monaca 6, Pa. *0A-1*
Maxwell, William J., 1430 Burtner Rd., Tarentum, Pa. *3A-1*
May, Arthur R., Sterling Casting Corp., Bluffton, Ind. *34AF-3*
May, Carl P., 3 Enright Ave., Jeffersonville, Ind. *18A-1*
May, Christie M. Jr., 24 Glen Keith Rd., Glen Cove, N. Y. *5A-2*
May, Harold H., 630 Mt. Zoar, Elmira, N. Y. *48S-3*
May, James E., 113 Genlich St., Ft. Worth 14, Texas *19A-1*
May, Robert M., 401 Washington Ave., Sandersville, Ga. *0A-1*
May, Walter C., 6819 Roberts Ave., University City 14, Mo. *16A-1*
May, William C. Jr., 316 E. 22nd, Silver City, N. M. *59A-1*
Mayberry, Frank P. Jr., R #2, Sharpsville, Pa. *24S-3*

Mayer, Robert L., 30 The Ledges Rd., Newton Centre 59, Mass. *30A-2*
Mayer, Victor P., 493 Dale Dr., M.R. 13, Erie, Pa. *51S-4*
Mayers, Robert G., Shreve, Ohio *19A-1*
Maynard, Harold B., Methods Engineering Council, 718 Wallace Ave., Pittsburgh 21, Pa. *3S-3*
Maynard, Miles J., Jackson Circle, Tullahoma, Tenn. *64A-1*
Mayo, Jack W., R #10, Kingsport, Tenn. *17A-1*
Mazur, John H., 3777 Washington Park Blvd., Newburgh Hgts. 5, Ohio *7A-2*
Meade, Donald F., 454 N. Almont Dr., Los Angeles 48, Calif. *23A-1*
Mead, Gordon S., 1121 Wellington Blvd., Columbus 19, Ohio *1A-2*
Meagher, Glenn B., South B0Q, Mare Island Naval Shipyard, Vallejo, Calif. *12A-1*
Means, M. Frank, 330 E. 11 St., Tulsa 20, Okla. *15A-1*
Measelle, Harold W., 3720 E. State Blvd., Ft. Wayne, Ind. *34S-3*
Meckle, Franklin C., 2012 Newcomer St., Richland, Wash. *0A-1*
Medford, J. Frederick, 2021 Springlake Dr. N.W., Atlanta, Ga. *6A-2*
Meier, France A., % Lamar State College, 4400 Port Arthur Rd., Beaumont, Texas *0A-1*
Meincer, John H., 1515 Holderby Rd., Huntington 1, W. Va. *58S-4*
Meinel, George S., Kenilworth Apt. #804, Philadelphia 44, Pa. *31A-2*
Meintel, Joseph E., 24 Colonial Lawns, Bath, N. Y. *48S-3*
Meisel, Seymour L., 229 Grayton Rd., Tonawanda, N. Y. *49S-3*
Menard, Fred S., 3326 Poinsettia Dr., Dallas, Texas *10AF-3*
Menke, Robert M., 528 7 Ave. S., St. Petersburg, Fla. *0A-1*
Mennell, Charles A., Southern Hotel, El Reno, Okla. *57A-2*
Mentz, Philip S., 718 Carol Marie Dr., Baton Rouge, La. *41A-1*
Menzel, John, ACF Industries, 30 Church St., New York 8, N. Y. *58S-4*
Merdinger, Arthur C., 137 Lorraine Ave., Mt. Vernon, N. Y. *5A-2*
Mergen, Francis C., Engineering Dept., Bradley University, Peoria 5, Ill. *0A-3*
Merkel, Mary R., 67 Village Lane, Rochester 10, N. Y. *44S-4*
Merrick, Charles M., 815 Porter St., Easton, Pa. *0S-3*
Merrill, Karl R., 11 E. 16th South, Orem, Utah *50A-2*
Merritt, Croft S., 931 Montrose Ave., Columbus 9, Ohio *18-4*
Merritt, William R., 1282 Highland Dr., St. Albans, W. Va. *58S-4*
Mertz, Edgar T., 36 Shaw Place, Staten Island 2, N. Y. *5A-2*
Mertzlufft, Edward C., 114 Whitmore Rd., No. Syracuse, N. Y. *13A-2*
Merz, John E. Jr., Corning Glass Works, Corning, N. Y. *48AF-3*
Messenger, Miles S., 243 Athol Ave., Oakland, Calif. *12A-1*
Messersmith, Edwin C., 608 Roebuck Circle, Birmingham, Ala. *9A-2*
Messett, Robert L., 9122 Mills Ave., Whittier, Calif. *23A-1*
Metcalf, Morris L., R #4, Brenda Dr., Winston Salem, N. C. *21A-2*
Metcalf, Henry M., 925 Republic Bldg., Cleveland 15, Ohio *7S-4*
Metelits, Bernard D., 2010 Lake Ave., Wilmette, Ill. *25S-4*
Metzger, Frederick L., Libbey Owens Ford Glass Co., National Bank Bldg., Toledo 3, Ohio *36A-1*
Metzger, Robert R., Chief Engineer, Allied Machine & Engineering, 2009 Corunna Ave., Owosso, Mich. *0A-1*
Metzger, Ted R., 8804 Waltlee Rd., Fern Creek, Ky. *18A-1*
Meyer, Arthur C., 3304 Lenox Dr., Dayton 9, Ohio *2S-4*
Meyer, Bernard L., P.O. Box 2610, Jacksonville 3, Fla. *27A-2*
Meyer, Ferdinand E., 8337 Graybirch Dr., Berkeley 21, Mo. *16A-3*
Meyer, Francis L., 234 Joyceann Dr., R. 2, Box 141, Manchester, Missouri *16AF-3*
Meyer, Karl H., Computer Systems Div., The Ramo Wooldridge Corp., P.O. Box 45067, Airport Sta., Los Angeles 45, Calif. *12A-1*
Meyer, Wilbert H., 7724 Kenridge Lane, Shrewsbury, Mo. *16A-1*
Meyer, William J., 215 Holloway Rd., Ballwin, Mo. *16A-1*
Meyerowitz, 1st Lt. Herbert B., Hq. & Hq. Co., 2nd Bn TECR (9829), Ft. Belvoir, Va. *14A-2*
Meyers, Dan, Standard Register Co., Pacific Div., 2101 Livingston Ave., Oakland, Calif. *12A-1*
Meyers, Francis J., 5103 W. Wait St., Seattle 16, Wash. *20A-2*
Meyers, Martin J., P.O. Dept., 512 Nicollet Ave., Minneapolis 2, Minn. *38S-4*
Meyers, Steven H., 17325 Steopel, Detroit 21, Mich. *47A-2*
Meynell, John F., 234 Waller, Lemay 23, Mo. *16AF-3*
Meyner, Gustave H. III, Westinghouse Edu. Center, Ardmore Blvd. @ Brinton Rd., Pittsburgh 21, Pa. *3A-1*
Michael, David K., 2565 Pershing Dr., Toledo 13, Ohio *36A-1*
Michael, Jose, Corrientes 525, Buenos Aires, Argentina *0A-1*
Michaels, Thomas W., 306 36th St. N.W., Canton 9, Ohio *19A-1*
Michel, Bryant L., Mill Supply & Machinery, 2910 Washington Ave., St. Louis 3, Mo. *16A-1*
Michel, Maurice R., Deere & Co., 3300 River Dr., Moline, Ill. *46A-2*
Michie, Hugh D., Ind. Engr. Dept., Lone Star Steel Co., Lone Star, Texas *60A-2*
Micka, Joseph G., 9624 Emerson St., Pittsburgh 35, Pa. *3A-1*
Midkiff, Raymond L., 206 C St. N.E., Miami, Okla. *0A-1*
Mihelich, Donald L., 608 Paseo De Los Reyes, Redondo Beach, Calif. *23A-1*
Mihelick, Stanley J., 2342 Giffels Dr., Cuyahoga Falls, Ohio *52A-1*
Miksis, Felix S., 3287 Edgemont St., Philadelphia 34, Pa. *31A-2*
Mikulski, Robert J., 11 Republic St., Binghamton, N. Y. *48AF-3*
Miles, Louis W., 2601 Parker St., Berkeley, Calif. *12A-1*
Milewicz, Leo S., 5195 Belmont, Hamtramck 12, Mich. *47A-2*
Millar, M. B., 205 Paseo De Las Delicias, Redondo Beach, Calif. *23S-4*
Miller, Ens. Allen W., USS Henley (DD762), % FPO, N. Y. N. Y. *0A-1*
Miller, Bertram Jr., General Electric Co., P.O. Box 196, Bldg. A, Evandale Plant, Cincinnati 15, Ohio *8S-4*
Miller, C. Emil, Colorado Fuel & Iron Corp., Pueblo, Colo. *25A-1*
Miller, Crockford, Box 67, Holden, W. Va. *58S-4*
Miller, Ens. Daniel H., 4120 E. 1st, Berkeley, Calif. *12A-1*
Miller, Dolton M., 374 Bishop, Sunnyvale, Calif. *37S-4*
Miller, E. Everett, 147 Arlington Ave., Berkeley 7, Calif. *12S-4*
Miller, George H., 204 Shore Dr., Laconia, N. H. *63S-3*
Miller, Grover C., 1380 Grizzley Peak Blvd., Berkeley 8, Calif. *12AF-3*
Miller, Harold A., 21 Albemarle Rd., Rahway P.O., Colonia, N. J. *61A-2*
Miller, Harold L., 114 E. 11th Ave., Columbus 1, Ohio *1A-2*
Miller, Harry P., 110 Cornwall Lane, Rochester 17, N. Y. *44S-4*
Miller, Howard, 3103 Hillside Dr., Burlingame, Calif. *37AF-3*
Miller, John C., Aluminum Co. of America, Box 500, Lafayette, Ind. *35A-2*
Miller, John D., Lone Star Steel Co., Lone Star, Texas *60AF-4*
Miller, Malcolm F., 71 Prince Frederick St., Washington Park, King of Prussia, Bridgeport R.D., Pa. *31A-2*
Miller, Martin C., Rolling Acres, Chesterland, Ohio *7S-4*
Miller, Norman L., 252 W. 13th St., Elmira Hgts., N. Y. *48A-1*
Miller, Owen W., 1709 Kappel Ave., St. Louis 21, Mo. *16S-3*
Miller, Ralph H. Jr., P.O. Box 881, Texas City, Texas *22A-1*
Miller, Reuben, 7215 S. Yates Ave., Chicago 49, Ill. *25A-1*
Miller, Robert Erwin, 658 Yearling Rd., Columbus 13, Ohio *1A-2*
Miller, Robert F., 3177 Maige Rd., Columbus, Ohio *1A-2*
Miller, Samuel D., 324 Rockhill Rd., Pittsburgh 16, Pa. *3S-3*
Miller, Samuel H., 9 Madeira Ave., Coral Gables, Fla. *40AF-3*
Miller, Walter L., 2045 N. Kennison, Toledo 9, Ohio *36S-3*
Miller, William R., 24445 Garden Dr., Euclid 23, Ohio *7A-2*
Milliken, Don B., 1702 E. Main St., Endicott, N. Y. *48A-1*
Millner, Leonard J., 934 Greenwood Ave., Trenton 9, N. J. *31A-2*
Mills, Prof. J. P., 2221 Donald St., Ames, Iowa *46S-4*
Mills, John M. Jr., R. 14, Duncan Rd., Knoxville, Tenn. *11A-2*
Mills, Norman L., 626 Downing Dr., Richardson, Texas *10A-1*
Milne, Don F., 1300 W. 2nd St., Hobart, Ind. *53A-1*
Milstead, James L., 1410 San Antonio, Tyler, Texas *60A-2*
Minard, Thomas O., Schultz Die Casting Co., 1810 Clinton St., Toledo 7, Ohio *36AF-3*
Minasy, Arthur J., 2712 Digby Ave., Cincinnati 20, Ohio *8S-4*
Miner, Ned B., 118 Royer St., North Canton, Ohio *19A-1*
Miner, S. Donald Jr., 1912 E. Denker, Wichita, Kansas *56A-2*
Minkoff, Jack R., 6023 W. 8th St., Los Angeles 36, Calif. *23A-1*

Minton, Dennis C., 410 S. Center Ave., Piedmont, Ala. *0A-1*
Mintz, Stanton E., 3849 Sequoia, San Diego 9, Calif. *29A-2*
Mirakian, Paul Jr., 939 W. Grace St., Richmond 20, Va. *0A-1*
Miron, William E. Jr., 661 Croswell S.E., East Grand Rapids, Mich. *0A-1*
Missakian, M. Arys, 262 Eason, Highland Park 3, Mich. *47A-2*
Mitchell, A. Dean, Kaiser Steel Co., c/o Ind. Engr. Dept., Fontana, Calif. *0A-1*
Mitchell, Gerald T., 1219 Elmwood Ave., Wilmette, Ill. *25S-4*
Mitchell, Harlan D., 2204 Huntington, Arlington, Texas *10A-1*
Mitchell, James R., 15 Raines Park, Rochester 13, N. Y. *44A-2*
Mitchell, Michael B., 119 "J" St. N.E., Auburn, Wash. *20A-2*
Mitford, William J., 13345 Talbot, Huntington Woods, Mich. *47A-2*
Mitten, Loring G., 330 Fairway Dr., Columbus 14, Ohio *1A-4*
Mixson, Karl J., Carbide & Carbon Chemicals Co., 437 MacCorkle Ave., So. Charleston, W. Va. *58A-2*
Moesny, Steven M., P.O. Box 71707, Los Angeles 1, Calif. *23S-4*
Modla, Edward A., 56 Kempson Place, Metuchen, N. J. *61S-4*
Modrzejewski, Eugene J., 204 S. Lincoln Pk. Dr., Evansville 14, Ind. *0A-1*
Moeck, Carl H., 3140 S. Michigan Ave., Apt. 901, Chicago 16, Ill. *25A-1*
Mohendra, D. D., L4 19, Road No. 9, Farm Area, Kadma, Jamshedpur, India *48S-S*
Mohler, Howard D., Standard Electrica S. A., Caixa Postal 430, Rio de Janeiro, Brazile, S. A. *0A-1*
Moir, John T. III, Kekaha Sugar Co., Ltd., Kekaha, Kauai, T. H. *0A-1*
Molascon, George E., Box 510, Provo, Utah *50S-4*
Moldovan, R. J., 3517 26th St. N.W., Canton, Ohio *19S-3*
Monahan, Robert E. Jr., 1133 Pike Rd., Birmingham 8, Ala. *9A-2*
Monda, Tarzan, Timken Roller Bearing Co. (Steel & Tube Div.) Harrison Ave. S.W., Canton, Ohio *19S-3*
Monroe, Lawrence J., Eaton Axle Co., 739 E. 140th St., Cleveland, Ohio *7AF-4*
Montanari, Fred W., 333 Francis Rd., Pittsburgh 35, Pa. *3A-1*
Montgomery, Jacob B., 76 Bond St., Gloucester, Mass. *0A-1*
Montgomery, Roland, 462 Nobottom Rd., Berea, O. *7A-2*
Moomaw, David P., 5223 21st Ave. S.W., Seattle 6, Wash. *20A-2*
Moon, Robert F., 51 Thackeray, Providence 7, R. I. *0A-1*
Mooney, Richard W., 3208 Edmund Blvd., Minneapolis 6, Minn. *38S-4*
Moore, Benton F., 155 Cambridge Ave., Holland, Mich. *0A-1*
Moore, Curtis E., 1711 Lenland Ave., Knoxville 20, Tenn. *11A-2*
Moore, George H., 260 Ruttege, Gary, Indiana *53AF-3*
Moore, Glenn Ward, 1560 Hanna Bldg., Cleveland, Ohio *7S-4*
Moore, Harold W., 5377 Cobb Dr., Dayton 3, Ohio *2A-2*
Moore, Harry R., 808 W. Walnut Ave., Dalton, Ga. *54S-3*
Moore, James M., Mechanical Engr. Dept., Clarkson College of Tech., Potsdam, N. Y. *0A-1*
Moore, John M., Inverness, Gordonsville, Va. *0S-3*
Moore, Joseph C., 15 E. 40th St., New York 16, N. Y. *5S-4*
Moore, Leonard D., 1632 N. 47th, E. St. Louis, Ill. *16A-1*
Moore, Neal B., 8361 Shirley Ave., Northridge, Calif. *23S-4*
Moquin, Joseph C., 825 Owen Drive, Huntsville, Ala. *0S-3*
Moran, David H., 1532 Greenvally Rd., Danville, Calif. *12A-1*
Moran, Robert J., 352 Broadway, Chula Vista, Calif. *29A-2*
Morency, Joseph C., 4 W. Terrace, Salem, Mass. *30S-4*
Moret, Simon, 4465 LaJolla Circle, Tucson, Ariz. *0A-3*
Morgan, Harold R., 1243 N. 78th E. Ave., Tulsa, Okla. *15A-1*
Morgan, Russell E., 1862 Kings Court, B., Columbus 12, Ohio *1A-2*
Morin, Armand J., 23 School St., Laconia, N. H. *63A-1*
Moritz, Karl B., 300 Lawrence Ave., East McKeesport, Pa. *3A-1*
Morketter, Stanley R., 3930 North St., Sacramento, Calif. *43A-2*
Morrell, Davis N., 2002 S. Lafayette, Denver 10, Colo. *32S-3*
Morrell, William C. Jr., 614 Buckingham Ave., Milford, Conn. *0A-1*
Morris, George W., 260 Miller Reed Ave., S.E., Atlanta, Ga. *6A-2*
Morris, Ned F., 6140 Joyce Lane, Cincinnati 37, Ohio *8A-4*
Morris, Ralph S., 312 Via Pasqual, Redondo Beach, Calif. *23A-1*
Morris, Robert H., IBM Corp., Dept. 708, Endicott, N. Y. *48A-1*
Morrison, William R., 6808 Clarendon Hills Rd., Clarendon Hills, Ill. *25A-1*
Morrissey, James L., TCM American Embassy, New Delhi, India *0S-3*
Morrow, Keith A., 51 Walnut St., Seneca Falls, N. Y. *44A-4*
Morse, Ens. Arthur R. Jr. USNR, BTU 18, N.A.A.S., Whiting Field, Milton, Fla. *33A-1*
Morse, Michael S., 5846 Chippewa, Toledo 13, Ohio *36S-3*
Morse, Richard D., Apt. #6, 5226 Wythe Ave., Richmond, Va. *0A-1*
Morse, Stanley M., 3621 Ingleside Rd., Cleveland 20, Ohio *7A-4*
Morton, Richard Y., 4037 Roland Circle, Dayton 6, Ohio *2A-2*
Morvai, Oscar, 3209 Norris Ave., Sacramento, Calif. *43A-2*
Moser, Ivan S. Jr., 342 Savannah Dr., San Antonio, Texas *39A-2*
Moser, Max L., 1698 Crescent St., Franklin, Ind. *0A-1*
Moses, Daniel H., 17 Osage Dr., Cranford, N. J. *61S-4*
Moss, Clifton L. III, Wyatt Metal & Boiler Works, P.O. Box 5418, Dallas 22, Texas *10S-3*
Most, Joseph R., 63 W. Bellcrest Ave., Pittsburgh 27, Pa. *3A-1*
Mote, Fred T., 126 Ingersoll Ave., S.W., Knoxville, Tenn. *11A-2*
Motko, Norman S., 691 Bayridge Blvd., Willowick, Ohio *7A-2*
Mott, Clinton P., Div. Ind. Engr., Utah Copper Div., Kennecott Copper Corp., P.O. 1650, Salt Lake City 10, Utah *50S-4*
Mott, Paul S., 2905 Ranier Rd., Memphis, Tenn. *28AF-4*
Motto, Robert S., 12628 Iroquois Ave., Cleveland 8, Ohio *7A-2*
Moughton, Alfred, 3842 W. 146th St., Cleveland 11, Ohio *7A-2*
Moulthrop, John M., 1203 Ford Rd., Lyndhurst 24, Ohio *7S-4*
Movshin, Joseph, 9220 Old Bonhomme Rd., St. Louis 24, Mo. *16S-3*
Mrdeza, George E., 3683 Carlisle Rd., Wantagh, Levittown, N. Y. *5A-4*
Muckerman, Ralph A., 45 Brighton Way, Clayton 24, Mo. *16A-1*
Mueller, Dale F., 33 Amerige Park, Rochester 17, N. Y. *44A-2*
Mueller, Herbert P., Box 623, Ogden Dunes, Gary, Ind. *53S-3*
Mueller, Marvin E., 514 Cannonbury Dr., Webster Groves 19, Mo. *16A-1*
Muije, Johannes, The Eimco Corp., 634 S. 4th West, Salt Lake City, Utah *50A-2*
Muir, Donald G., 26 Cleveland Ave., Hobart, Ind. *53S-3*
Mullee, Prof. Wm. R., College of Engr., New York Univ., New York 53, N. Y. *5S-4*
Muller, Frederick M., 830 Pierce Ave., Macon, Ga. *55S-3*
Mulligan, Paul B., Paul B. Mulligan & Co., 405 Lexington Ave., New York 17, N. Y. *5S-4*
Mulligan, Richard A., Apt. 4A Eldridge Gardens Apts., Eldridge & Taylor Aves., W. Collingswood 6, N. J. *31A-2*
Mulling, Joseph F., P.O. Box 234, Keystone Heights, Fla. *27A-2*
Munday, Charles S., 7150 Beach Dr., Seattle 16, Wash. *20A-2*
Munday, Hugh F., 1603 Babs Rd., Memphis, Tenn. *28S-4*
Mundel, Marvin E., Prof. of Management, Marquette Univ., 606 N. 13th St., Milwaukee, Wisc. *45S-4*
Munson, John C., Box 73, Gonzales, La. *0A-1*
Murbach, John R., 35 W. Cambridge St., Alliance, Ohio *13S-3*
Murchie, John W., 3070 Woodbury Rd., Shaker Heights, Ohio *7S-4*
Murdock, Roger M., 74 Daniel Webster Drive, Reno, Nev. *0A-1*
Murphy, Arthur C., Portsmouth Naval Shipyard, Code 300, Portsmouth, N. H. *62A-2*
Murphy James W., 130 Van Mara Dr., No. Syracuse, N. Y. *13S-4*
Murphy, Leo, Shippers Car Line, 30 Church St., New York 7, N. Y. *5A-2*
Murphy, Robert L., Red Jacket Mfg. Co., 1051 S. Rolff St., Davenport, Iowa *46S-4*
Murphy, Thomas B., 7025 W. Wells St., Wauwatosa 13, Wisc. *45A-2*
Murray, John M., Vanity Fair Mills, Inc., Monroeville, Ala. *33A-1*
Murray, Paul J., 825 W. 32nd St., Erie, Pa. *51S-4*
Murray, John C., 622 17th St., Manhattan Beach, Calif. *23S-4*
Murray, Tom A. S., 7100 Sq. Support Wing, APO 633, c/o Postmaster New York, N. Y. *0A-1*
Murthy, K. R., I.E. Dept., Tata Iron & Steel Co., Ltd., Jamshedpur, India, *4A-S*
Murty, A. V. R. L. N., I.E. Dept., Tata Iron & Steel Co., Ltd., Jamshedpur, India *4A-S*
Murty, R. S., Bungalow No. 2, Crossroad No. 1, T.C. Colony, Jamshedpur, India *4S-S*
Muse, Alan W., 4005 Herndon, Corpus Christi, Texas *0A-1*

Muse, William H., 1210 Riverside Dr., Kynlyn Apts., Wilmington 3, Del. *0A-1*
Mussina, Robert D., 216 W. 38th St., Erie, Pa. *51AF-4*
Myers, J. Edward, 2436 Wallace Ave., Lafayette, Ind. *35A-2*
Myers, J. P., 2652 Welsford Rd., Columbus 21, Ohio *1S-4*
Myers, Laurence F., Apsco of Indiana, 10th St. Baer Field, Ft. Wayne, Ind. *34AF-3*
Myers, Norman G. Jr., 4148 Crestmont Ave., Erie, Pa. *51A-2*
Myers, Richard E., 121 Dixon Ave., Birmingham 9, Ala. *9A-2*
Myers, Russell E., 948 S. Union Ave., Salem, Ohio *24S-3*
Myrick, Lester L., Kaiser Aluminum, Airline Highway, Baton Rouge, La. *41AF-3*
Mytinger, Walter H., The Kroger Co., 1212 State Ave., Cincinnati 4, Ohio *8S-4*

Naber, Fred P., 1431 Sycamore Lane, Northbrook, Ill. *25S-4*
Nadler, Dr. Gerald, Dept. of Ind. Engr., Washington University, St. Louis 5, Mo. *16S-3*
Naehring, Douglas C. E., 28 East Pacemont Rd., Columbus 2, Ohio *1S-4*
Nafziger, Dale A., c/o B. F. Goodrich Co., Miami, Okla. *0A-3*
Naillon, Mrs. J. D., 1824 Magnolia Way, Walnut Creek, Calif. *12A-1*
Nair, K. P. K., 30 J. Road, Jamshedpur, India *4S-S*
Nanes, George, 2101 ½ Elm St., Youngstown, Ohio *24A-1*
Nantus, George O., 3022 Wisconsin Ave., Berwyn, Ill. *25A-1*
Narrie, John L., 64 Cameron St., Rochester 6, N. Y. *44S-4*
Nash, George S., 104 Coventry Rd., Kenmore 17, N. Y. *49S-3*
Nason, Peter V. Jr., 3431 10th Pl. S.E., Apt. 2B, Washington 20, D. C. *14A-2*
Nass, Werner, 95 Mitchell Ave., Binghamton, N. Y. *5A-2*
Natarajan, J., Qr. No. 22, L4 Type, Cross Road No. 13, Agrico, Jamshedpur, India *4S-S*
Navarre, Walter A., 2644 Venice, Dearborn, Mich. *47A-2*
Nazzitto, Frank J., 130 S. Broad, Norwich, N. Y. *0S-3*
Neal, Duane, 5578 Pershing Ave., St. Louis 21, Mo. *16A-1*
Neat, Cletus W., 1714 Nelson, Ft. Wayne 6, Ind. *34AF-3*
Neel, Jack C., 326 Melody Ave., Route 7, Kalamazoo, Mich. *0S-3*
Neibaur, Roderick W., 1862 Bird Ave., San Jose, Calif. *37A-1*
Neidermeyer, Jack M., 772 Wainwright Dr., Columbus 11, Ohio *1A-2*
Neislar, W. Ronald, 515 S. 28th, Lafayette, Ind. *35A-2*
Neiswander, Kern K., 2201 Curtis Ave., St. Albans, W. Va. *58A-2*
Nelson, Bruce F., 18408 S. Western Ave., Homewood, Ill. *25S-4*
Nelson, Carl H., McGill Warner Farnham Co., 501 Park Ave., Minneapolis 15, Minn. *38AF-4*
Nelson, Charles V., 15 Shore Ave. S.W., Tacoma, Wash. *20A-2*
Nelson, Glenn W., 33628 Altaloma, Farmington, Mich. *47S-4*
Nelson, Howard D., 510 Adeline Ave., Vandalia, Ohio *2AF-4*
Nelson, Howard H., 1200 Colorado Blvd., Apt. 202C, Denver 6, Colo. *32A-1*
Nelson, Ralph J., Griscom Russell Co., 225 Wetmore Ave. S.E., Massillon, Ohio *19S-3*
Nelson, Raymond A., 2840 E. Adams Ave., Phoenix, Ariz. *0A-1*
Nemnich, Jared E., 823 Schwartz Rd., Edwardsville, Ill. *16A-1*
Nepute, John A., 1137 11th Ave., Huntington, W. Va. *58A-2*
Nesbit, Sam F. Jr., 6111 Lavendale, Dallas 30, Texas *10S-3*
Nesher, Moshe, Ind. Engr., c/o "Kadar" Pottery Works Ltd., Haifa, P.O.B. 605, Israel *0A-1*
Neu, Howard J., 3235 Grand Concourse, New York 68, N. Y. *5A-2*
Neumann, Cordell W., 1419 "E" St., Ontario, Calif. *0A-1*
Neumann, Norman A., Radio Receptor Co. Inc., 84 N. 9th St., Brooklyn 11, N. Y. *5AF-4*
Neven, Albert L., 4713 Longshore, Philadelphia 35, Pa. *31A-2*
Neville, William R., 616 Merrillville Rd., Crown Point, Ind. *53S-3*
Nevins, John W., 4401 Lanoir Circle, Chattanooga 11, Tenn. *54A-1*
Nevros, John A., 99 Leesburg Pike, Apt. 1, Falls Church, Va. *14A-2*
New, Walter L., Rt. 2, Box 224, Savannah, Ga. *26A-1*
Newbrough, Edgar T., 1511 Bellevue Ave., Richmond Heights 17, Mo. *16S-3*
Newby, Charles H., 6262 Prospect Ave., Dallas, Texas *10A-1*
Newell, Heber L., 1944 Chelsea Rd., Columbus 12, Ohio *1S-4*
Newman, Harry L., 5017 S. Blackstone Ave., Chicago 15, Ill. *25S-4*
Newnham, Donald E., 297 Sandalwood Dr., Rochester 16, N. Y. *44S-4*
Newsom, Robert W. Jr., R. J. Reynolds Tobacco Co., Winston-Salem, N. C. *21S-4*
Newsome, Hamner E., 1002 Wateree St., Kingsport, Tenn. *17A-1*
Newton, William H., 302 South Blvd., Evanston, Ill. *25A-1*
Nichols, D. Edward, 116 So. Mason St., Saginaw, Mich. *0A-1*
Nichols, Richard G., IBM Corp., Endicott, N. Y. *48S-3*
Nicholson, Marshall W., 3330 Garland, Ft. Wayne, Ind. *34AF-3*
Nicholson, Theodore, 363 Edgewater Rd., Cliffside Park, N. J. *61A-2*
Nicklin, Bryan E., 530 N. Willow St., Kent, Ohio *52AF-3*
Nicolle, Henry T., 2368 Edgewood Dr., Baton Rouge, La. *41AF-3*
Niebel, Benjamin W., R. #1, State College, Pa. *0S-3*
Niehaus, William F., 1289 Nowlen St., Mentor, Ohio *7AF-4*
Nightengale, James M., Aeolian Amer. Corp., East Rochester, N. Y. *44A-2*
Nimtz, Roderick L., 494 Parkside Dr., Bay Village, Ohio *7A-2*
Nissley, Harold R., 3514 Radcliffe Rd., Cleveland Heights 21, Ohio *7S-4*
Nix, Charles L., 6226 Montgomery, Cincinnati 13, Ohio *8S-4*
Noah, 1/Lt. Joseph W., Box 414, Griffiss AFB, Rome, N. Y. *0A-1*
Noda, Clarence, P.O. Box 3316, Honolulu, T. H. *0A-1*
Nolan, Edgar M., 250 Deer Trail, Canfield, Ohio *24S-3*
Nolan, John J., 9052 S. Dauphin (RR), Chicago 19, Ill. *25A-1*
Noll, Sidney, 1915 Miami Ct. N.E., Canton, Ohio *19S-3*
Noller, Carl W., 2304 Sigwalt St., Arlington Heights, Ill. *25S-4*
Nomi, 1/Lt. Taichi, USAF, A03014924, 35th Installations Squadron, APO 328, San Francisco, Calif. *0A-1*
Nordahl, James D., P.O. Box 71, Livermore, Calif. *12S-4*
Nordman, Glenn W., 690 S.E., First St., Hialeah, Fla. *40AF-3*
Nordstrom, Virgil D., 10146 32nd Place S.W., Seattle 66, Wash. *20A-2*
Norem, Prof. Bert H., Chairman, Industrial Engineering, Syracuse University, Syracuse 10, N. Y. *13S-4*
Norman, Thomas S., 129 Minnesota St., Rochester 9, N. Y. *44A-2*
Norrick, Leslie R., 813 Velsack Rd., Glenshaw, Pa. *3A-3*
Norris, L. H. Jr., 1943 Cummings Dr. S. W., Atlanta, Ga. *6S-4*
Northrup, John F., 521 Currie Way, Birmingham 9, Ala. *9A-4*
Northwood, Jack E., 539 S. Franklin, Dunkirk, Ind. *0A-3*
Norvill, Robert V., 1316 Indiana N.E., Albuquerque, N. M. *59A-1*
Noto, Vincent C., 8408 14th Ave., Brooklyn 28, N. Y. *5A-2*
Nottingham, Aulmon J., Box 596, Narrows, Va. *0A-1*
Nourie, William P., 59 Midland, Highland Park, Detroit, Mich. *47A-2*
Novotny, James F., 1535 S. 59th Ave., Cicero 50, Ill. *25A-1*
Novy, William J., 2270 Ranburn Drive, Gary, Ind. *53S-3*
Nowak, Carol C., 1035 W. Asheroft, Fresno 5, Calif. *0A-1*
Noymer, Arthur A., 6 Ames Rd., Marblehead, Mass. *30A-2*
Nunn, Ellsworth L., 1236 Wayside Place, Cincinnati 30, Ohio *8A-2*
Nunn, Stephen S. Jr., R. #9, Box 887, Tucson 10, Ariz. *0A-1*
Nunziato, D. J., 250 DeSota Rd., West Palm Beach, Fla. *0A-1*
Nupp, Thomas A., Supplee-Wills-Jones Milk Co., Philadelphia National Bank Bldg., Broad & Chestnut Sts., Philadelphia 7, Pa. *31S-4*
Nutt, John Carson, Douds, Iowa *0A-1*
Nutt, Merle C., 2119 W. Edgemont, Phoenix, Ariz. *0S-3*
Nutter, Waldo E., Ahner & Nutter, Inc., 1221 Locust St., St. Louis 3, Mo. *16S-3*
Nutting, Sidney T. Jr., P.O. Box 570, Savannah, Ga. *26A-1*
Nye, Frederick N., New York Central System, 230 Park Ave., New York 17, N. Y. *5S-4*
Nylin, Dean M., 16623 Benson Rd., Renton, Wash. *20AF-3*

Obert, Thomas W., 4068 Esperanza Dr., Sacramento 21, Calif. *43A-2*
Obsines, George J., 296 Duncan Station Rd., McKeesport, Penna. *3A-1*

Ochsner, John G., 7148 Homewood Dr., Oakland 11, Calif. *12A-1*
O'Clare, Albert R., USOM/Iran, APO 205, New York, N. Y. *0S-3*
O'Connell, Daniel E., 2753 Ohio Ave., Redwood City, Calif. *37AF-3*
O'Connell, Timothy W., 5416 Yermo, Toledo 13, Ohio *36AF-3*
O'Connor, Charles W., 41 Webster St., Malden 48, Mass. *30A-2*
O'Connor, Donald T., R. R. Donnelley & Sons Co., Crawfordsville, Ind. *35A-2*
O'Connor, Robert B., Box 792, Warrenville, Ill. *25A-1*
Odell, Bruce M., P. R. Mallory & Co. Inc., Battery Div., 60 Elm St., North Tarrytown, N. Y. *5AF-4*
Odom, Ralph G., 3207 Curtis Dr., Tyler, Texas *60A-2*
O'Donnell, Paul D., 2331 Lambeth Dr., Upper St. Clair Township, Bridgeville, Pa. *38-3*
Offord, Herbert G., 12880 Leverne, Detroit 39, Mich. *47A-2*
Ogburn, William E. Jr., 4170 Glenn Ave., Ext., Winston-Salem, N. C. *21A-2*
Ogden, Robert S., 154 LeGran Rd., Rochester 17, N. Y. *44S-4*
Ogilvie, Paul M., 3904 Britt, Ft. Smith, Ark. *0A-1*
Oglesby, Robert Sterrett, 537 Johnson St., Gary, Ind. *53A-1*
Ohleheiser, Robert J. Jr., 20 Howard Lane, Tonawanda, N. Y. *49AF-3*
Ohlweiler, Robert J., 4248 14th St., Rock Island, Ill. *46A-2*
Ohmart, Lowman T., Armstrong Cork Co., Lancaster, Pa. *0S-3*
Oiler, Eugene W. Jr., 29524 Bruce Dr., Willowick, Ohio *7AF-4*
O'Keeffe, William H., 30564 Kerry Lane, Wickliffe, Ohio *7A-2*
Okenfuss, Wilfred A, Wagner Electric Corp., 6400 Plymouth Ave., St. Louis 14, Mo. *16S-3*
O'Leary, Daniel J., 231 Halsey Dr., Harahan, La. *0A-1*
Olesiuk, Metsie A., 234 Pine Grove, Rochester 17, N. Y. *44A-2*
Olijnek, Nicholas, Minn. Honeywell Regulator Co., 2753 4th Ave. So., Minneapolis 8, Minn. *38S-4*
Olin, Raymond Gilbert, R. #1, Box 168A, Utica, N. Y. *0A-1*
Olinger, George F., 7 W. Sherry Dr., Trotwood, Ohio *2A-2*
Olivares, Carlos, Buenos Aires #17, Col. Alta-Vista, Monterrey, N. L., Mexico *0A-1*
Oliver, Jack D., Corunna, Ind. *34A-1*
Oliver, William E., Eli Lilly & Co., 740 S. Alabama, Indianapolis, Ind. *35S-4*
Oliver, William H., American Standard, Bond Plant, 25 Rano St., Buffalo 7, N. Y. *19S-3*
Olivero, Albert M., Robert Reiner, Inc., 550-64 Gregory Ave., Weehawken, N. J. *5AF-4*
Ollila, Raymond J., 5706 Verna Way, Concord, Calif. *12A-1*
Olmsted, Gerald W., 3702 Redwood Circle, Palo Alto, Calif. *37A-1*
Olscheske, Louis E., 4660 Arcadia Blvd., Dayton, Ohio *2A-2*
Olsen, Carl E., 3205 S. 74th St., Omaha, Nebr. *32A-1*
Olsen, Don J., Merck & Co. Inc., P. O. Box 387, Rahway, N. J. *61A-2*
Olsen, Leland M., 2329 Oneida St., Salt Lake City, Utah *50S-4*
Olsin, George M., 1721 Collamer Ave., East Cleveland 12, Ohio *7A-4*
Olson, Gordon A., 170 Juniper Rd., Searsdale, N. Y. *5A-2*
Olson, Robert L., 3027 So. Grant, Englewood, Colo. *32A-1*
Olsson, Carl O., 129 Roosevelt Ave., Cranford, N. J. *5A-2*
Oltmanns, Robert G., 305 So. Monroe, Krause Plow Corp., Hutchinson, Kansas *56A-2*
O'Malley, Charles P., 5509 Lorain Ave., Cleveland 2, Ohio *7A-2*
O'Neal, Edward Jr., 17349 Willshire Drive, South Bend, Ind. *0A-1*
O'Neil, Gerry, 1244 Asturia, Coral Gables, Fla. *40A-1*
O'Neill, Paul B., 2503 Drexel Ave., Ft. Wayne 4, Ind. *34A-1*
O'Neill, Richard P., 128 Fairfield Ave., Syracuse, N. Y. *13A-2*
O'Neill, William T., 25 Lyon Rd., Waldwick, N. J. *61A-2*
Opferman, C. Robert, 131 Eastman Dr., R. #2, Lorain, Ohio *7S-4*
Oppenheimer, Jesse A., 415 Hathaway Dr. W., San Antonio, Texas *39AF-4*
Optner, Stanford L., 12258 Renfrew Rd., Los Angeles 49, Calif. *23S-4*
Orcutt, Charles W. Jr., 4451 Wendover Lane, Charlotte, N. C. *21A-2*
Ordway, Edwin N. Jr., 17-10 Split Rock Rd., Fair Lawn, N. J. *5A-2*
Orensteen, Roger B., 4245 Church St., Skokie, Ill. *25A-1*
Orloff, Eugene, 751 Walton Ave., Bronx, N. Y. *5A-2*
Ornstein, Melvin, 4115 153rd Ave., Bellevue, Wash. *20A-4*
Orr, Charles W., 1031 Shady Lane Rd., Columbus 13, Ohio *1A-2*
Orr, Samuel H., P. O. Box 570, Savannah, Ga. *26A-1*
Orr, Sydney C. Jr., 3015 Wilson Ave., Lansing, Mich. *0A-1*
Ortendahl, Carl C., 90 Bond St., Norwood, Mass. *30A-2*
Osalza, Donald J., 80 Bushnell St., Hartford, Conn. *0A-1*
Osborn, Russell W. Jr., 209 Main St., Amesbury, Mass. *62A-2*
Osbourne, James F., 7 West 31st St., Savannah, Ga. *26A-1*
Osburn, Sherman L., 415 W. Dickson Ave., San Antonio 4, Texas *39S-4*
Osterberg, George B., 1524 23rd St. N.W., Canton, Ohio *19S-3*
Osterlind, J. Richard, 4037 Via Pavion, Palos Verdes Estates, Calif. *23S-4*
Ostman, Stanley W., 16289 Lyle St., San Leandro, Calif. *12AF-3*
Ostrognai, Ernest R., 1825 East 32nd St., Lorain, Ohio *7S-4*
Otis, John J., Brown-Lipe-Chapin Div. G.M.C., Town Ling Rd., Syracuse, N. Y. *13A-2*
O'Toole, John H., 410 Fernando Primero, Hato Rey, Puerto Rico *0S-3*
Otremba, Frank C. Jr., 5046 Jackson Blvd., Lake Cable, Canton 9, O. *19S-3*
Ott, Howard F., 1329 Florencedale Ave., Youngstown, Ohio *24A-1*
Otwell, Orville V., 1333 Wingfield St., Augusta, Ga. *0A-1*
Ourand, Richard C., Campbell Soup Co., 2550 W. 35th St., Chicago 32, Ill. *25A-1*
Overby, W. R., 2840 N. Spring, St. Louis, Mo. *16S-3*
Overton, David A., P. O. Box P, Oak Ridge, Tenn. *11S-4*
Owades, Henry M., 1404 Amend Dr., East Meadow, N. Y. *5A-2*
Owen, Cleveland E., Bellemont Motor Hotel, 7370 Airline Highway, Baton Rouge, La. *41A-1*
Owen, Herman W., Stromberg-Carlson Co., 100 Carlson Rd. Rochester, N. Y. *44A-2*
Owens, Berl W., Dept. of Mechanical Engr., University of Washington, Seattle 5, Wash. *20S-4*
Owens, Desmond H., 1620 Cross Way, San Jose, Calif. *37A-1*
Owens, Thomas J., 2927 Ewald Circle, Detroit 38, Mich. *47A-2*

Pace, Eldon, 282 N. Lakeview, Clearfield, Utah *50A-2*
Pace, Morton L., 4403 Live Oak Lane, Chattanooga 11, Tenn. *54A-1*
Paden, Ralph S., Aladdin Rd., Lookout Mt., Tenn. *54A-1*
Paffrath, Fred G., 22 Woodland Ct., Pompton Plains, N. J. *0A-1*
Page, Clayton E., 51 Clifton Park, Melrose 76, Mass. *30A-2*
Page, Edward L., Ins. for Res. in Prod., % Amer. Embassy, Tokyo, Japan, APO 500, San Francisco, Calif. *0S-3*
Page, Harold A., 369 La. Cuesta, Menlo Park, Calif. *37A-1*
Page, Thomas W., 6745 Saroni Dr., Oakland 11, Calif. *12A-1*
Paige, Orville L., 2230 S. Ridgewood, Wichita 18, Kansas *56A-2*
Palken, Prof. George, 153 Hackensack Rd., Chestnut Hill 67, Mass. *30S-4*
Pall, Raymond M., 114 Rosemont Dr., San Antonio, Texas *39A-2*
Palmer, Alten C., 2728 Wyndale Rd., Toledo 13, Ohio *36A-1*
Palmer, Edwin L. Jr., 30 Ginn Rd., Winchester, Mass. *30S-4*
Palmer, Eugene H. Jr., P. O. Box 66, St. Simons Island, Ga. *0A-1*
Palmer, Roger W., 2935 Seymour Dr., Dallas 29, Texas *10A-1*
Palmieri, Louis B., 112 Neptune Ave., Jersey City 5, N. J. *5AF-4*
Paradice, Wm. L. Jr., 1329 Westmont Rd. S.W., Atlanta, Ga. *6A-2*
Paras, George S., 9107 15th N.E., Seattle 5, Wash. *20S-4*
Parden, Robert J., College of Engr., University of Santa Clara, Santa Clara, Calif. *37S-4*
Pardo, Diego, Carrera 3a. No. 1-39, Cali, Colombia *0A-1*
Parish, Robert E., 105 Fairview Ave., Painted Post, N. Y. *48S-3*
Park, Frank A., 1551 34th Ave., Moline, Ill. *46S-4*
Park, F. W., 4879 Oakland Dr., Cleveland 24, Ohio *7S-4*
Parke, Allen J. Jr., 101 Woodside Ave., Johnstown, Pa. *0A-1*
Parker, B. Ronald, P. O. 566, Ulysses, Kansas *10A-1*
Parker, Donald B., 106 4th Ave., Melbourne, Fla. *0A-1*
Parker, Gayle, 400 N. Frederick St., Arlington 3, Va. *14A-2*
Parker, Henry G. Jr., 501 Dreams Landing, Annapolis, Md. *42S-4*
Parker, Russell H., 6624 Ash Ave., Gary, Ind. *53A-1*
Parker, Wendell R., 88 Cleopatra Dr., Concord, Calif. *12S-4*
Parker, William E., 703 Orwood Place, Syracuse 8, N. Y. *13A-2*

Parks, Edwin R., 3355 Mildred Lane, Lafayette, Calif. *12S-4*
Parks, John H., 4040 Hilliard Cemetery Rd., Hilliards, Ohio *1A-4*
Parks, Kay D., Kennecott Copper Corp., Dept. of Mills, Garfield, Utah *50A-2*
Parks, Newton I., Bordentown Manor Apts., 200 E. Chestnut St. Bordentown, N. J. *31A-2*
Parks, William R., 2137 Rando Lane, N.W., Atlanta 18, Ga. *6A-2*
Parks, Willie Nathan, 3411 Lincoln St., Portsmouth, Va. *0A-1*
Parrott, Cecil W., 16245 S.E. 7th, Bellevue, Wash. *20A-2*
Parsons, Cortland F., 206 Audubon Rd., Fayetteville, N. Y., *13A-4*
Parsons, Edwin R., 218 Christian, Hubbard, Ohio *24A-1*
Parton, Edward R., 118 Edgewater Apts., Essex 21, Md. *42A-2*
Partridge, Lawrence R., C. Brewer & Co., Ltd., 33 Waianuenue Ave., Hilo, Hawaii *0S-3*
Paschall, W. Eugene II, Engineering Supply Co., 6000 Denten Dr., Dallas 19, Texas *10A-1*
Pashalian, John L., 65 W. 181 St., New York 53, N. Y. *5A-2*
Pate, John W., 712 Algonquin Dr., Morristown, Tenn. *11A-2*
Patrick, Austin E., 28003 Wildwood Trail, Farmingtown Twp., Mich *47S-4*
Patten, Ezra B., 99 W. 1200 S., Orem, Utah *50A-2*
Patterson, Burton B., 1401 43rd St., Birmingham 8, Ala. *9S-4*
Patterson, David G., 586 Lakewood Rd., Walnut Creek, Calif. *12S-4*
Pattillo, John D., P. O. Box 504, Daingerfield, Texas *60A-2*
Patton, Oliver J. Jr., 768 Stone Lane, Palo Alto, Calif. *37A-1*
Paul, Arthur N., 31 Palmerston Rd., Rochester 18, N. Y. *44S-4*
Paul, Thomas H. Jr., 938 13th Ave., Huntington, W. Va. *58A-2*
Payne, Boyd L., 1859 Overton Park Ave., Memphis, Tenn. *28S-4*
Payne, Donald S., 338 So. Chauncey Ave., W. Lafayette, Ind. *35S-4*
Payne, Mathew A., General Manager, Lubrizol of Canada Ltd., P. O. Box 26, Niagara Falls, Ontario, Canada *49S-3*
Peacor, Robert W., 46 Oneta Rd., Rochester 17, N. Y. *44A-2*
Peal, Marshall L., 924 Edward Circle, Vallejo, Calif. *12A-1*
Pearce, Horace L., 5324 Halsey Court, Louisville, Ky. *18S-3*
Pearson, John O., 6 Concord Terrace, Thompsonville, Conn. *0S-3*
Peck, Eliot R., 1662 Garnet Lane, Concord, Calif *12S-4*
Peck, John R., 200 E. Ellis St., East Syracuse, N. Y. *13A-2*
Peckham, Harry E., 5557 Taft Ave., Oakland 18, Calif. *12A-1*
Peckover, Lester C., 236 S. Florence, Wichita 13, Kansas *56A-2*
Peel, Robert R., 15 Bird Lane, Hicksville, L. I., N. Y. *20S-4*
Peeples, Frank K., Isle of Hope, Savannah, Ga. *26A-1*
Pekor, Charles B., 5615 Kenilwood Dr., Houston 21, Texas *22A-1*
Pellegrino, Michael J. Jr., 847 Haddon Ave., Collingswood, N. J. *31A-2*
Peller, Richard A., 2352 Rosewood Ave., Winston Salem, N. C. *21A-2*
Pellizzi, P. Alexander, 86 Belford Ave., Bayshore, N. Y. *5A-2*
Pelot, Ben A. Jr., Rt. 3, Kingsport, Tenn. *17A-1*
Pelton, Benjamin H., 1570 23rd St., Ogden, Utah *50A-2*
Peltzman, Morton, 4323 East First St., Long Beach 3, Calif. *23A-1*
Penick, John M., P. O. Box 635, Hurley, N. M. *59S-3*
Penke, William D., 225 No. Main St., Natick, Mass. *30A-2*
Penuanen, Paul P., 15872 Via Nueva, San Lorenzo, Calif. *12AF-3*
Penniman, Allen D. Jr., 1907 Calhoun St., New Orleans 18, La. *0A-1*
Penniman, William L., 439 N. Clay, Kirkwood 22, Mo. *16S-3*
Pennington, J. P., 916 N. Gardner St., Hollywood 46, Calif. *23A-1*
Perdue, Charles G., 2947 Ingeloer St., San Diego 6, Calif. *29A-2*
Perez Guerrero, Fernando, Fernandez Leal 151, Mexico 21. D. F. *0S-3*
Perham, Clinton F., 1153 Claredege, Anaheim, Calif. *23A-1*
Perlich, Frederick A., 1606 W. Baker Ave., Fullerton, Calif. *23A-1*
Perkins, Edward G., 1281 Calkins Rd., Pittsford, N. Y. *44A-2*
Perkins, Walter C., 4623 Polk Ave., Pt. 2, Houston 23, Texas *22A-1*
Perlman, William, 1466-48 Street, Brooklyn 19, New York *5A-2*
Perloe, Paul, 933 Ilse Court, North Bellmore, L. I., N. Y. *5A-2*
Perry, John E. Jr., W. 1827 9th Ave., Apt. C., Spokane 43, Wash. *37A-1*
Perry, William F., Aluminum Co. of America, 5151 Alcoa Ave., Vernon, Calif. *23A-1*
Pesce, Daniel M., Food Fair Stores, Inc., 7000 N.W. 32nd Ave., Miami 47, Fla. *49AF-3*
Peskin, Myron I., 2350 Linwood Ave., Coytesville, N. J. *5S-4*
Peters, Charles A., 337 Frederick St., Bluefield, W. Va. *0A-3*
Peters, Frank W., 1000 Sansome St., San Francisco, Calif. *12A-1*
Peters, Hardy A., 7045 Kernel, Houston 17, Texas *22S-4*
Peters, Raymond H., 839 W. Main St., Ravenna, Ohio *7S-4*
Peters, Richard J., 1768 Academy Place, Dayton 6, Ohio *2A-2*
Peters, Wilbur, 69 Lamar, Grenada, Miss. *28A-2*
Petersen, Hans Georg, 488 Grandview Ave., Ridgewood 37, N. Y. *5A-2*
Petersen, Melvin J., 2560 Ranburn Drive, Gary, Indiana *53S-3*
Petersen, Ralph A., 724 E. 29th St., Marion, Ind. *0A-1*
Peterson, Earl R., 81 N. 2nd West, Sandy, Utah *50AF-4*
Peterson, Elvin L., 3645 Elmwood Place, Wayzata, Minn. *9S-4*
Petlicke, Nicholas K., 14512 Plymouth, Detroit 27, Mich. *47A-2*
Petlin, Jack W., 1843 So. Filbert Ct., Denver 20, Colo. *32A-1*
Petreyko, Walter P., 19 Water St., Wakefield, Mass. *0AF-3*
Petro, John S., 13995 Superior Rd., Apt. 302, E. Cleveland 18, O. *7S-4*
Petroff, Peter, 2461 Center St., Granite City, Ill. *16A-1*
Petruzates, Arthur P., 3541 Southwood Rd., Wichita, Kansas *56A-2*
Petterson, Karl E. E., 201 S. 186th, Seattle 88, Wash. *20S-4*
Petty, Wayne E., P. O. Box 187, Corning, Calif. *12S-4*
Petz, Richard A., 1804 Telegraph Rd., Alexandria, Va. *14AF-4*
Pewe, Paul D., 3066 35th Place, Sandia Base, Albuquerque, N. M. *59AF-3*
Pezzotti, Charles P., 78 Fairview Ave., Piedmont, Calif. *12S-4*
Pfefferle, Jack I., 476 Thronally Dr., San Leandro, Calif. *12S-4*
Pfeiffer, Lewis E., 113-14 72nd Rd., Forest Hills 75, N. Y. *5A-2*
Pfeiffer, Paul E., 631 Islington St., Toledo 10, Ohio *36A-1*
Pfender, John F., 1627 Lander Rd., Cleveland 24, Ohio *7S-4*
Pflum, Frederick W., R # 1, Box 99, Ulster Co., Rosendale, N. Y. *0A-1*
Phelan, Halpin M., 902 S. 42nd, Louisville, Ky. *18A-1*
Phelps, James C., Continental Pipe Line Co., Drawer 1267, Ponca City, Okla. *0S-3*
Philbrooks, Bryce D., 46-A West Blvd., Pittsburg, Calif. *12A-1*
Philips, Robert W., Kaiser Aluminum & Chem. Corp., P.O. Box 566, Erie, Pa. *51S-4*
Phillips, Charles E. Jr., 208 Guinn St., Marietta, Ga. *6S-4*
Phillips, George W. Jr., R # 1, Tully, N. Y. *13A-2*
Phillips, Joe F., 336 Nimitz St., Dallas, Texas *10A-3*
Phillips, William C., 419 Baublits Dr. S.E., Navy Point, Pensacola, Fla. *33A-1*
Philpott, Harry W., 1015 Carolina Ave., Winston Salem, N. C. *21A-2*
Pianin, Albert, 600 Asylum Ave., Hartford, Conn. *0A-1*
Picciotti, Velio G., 5410 Mary Lane Dr., San Diego 15, Calif. *29A-2*
Pickard, Donald E., 505 S.W. 1st, Bethany, Oklahoma *57A-1*
Pickens, Robert F., 107 Greenville St., Newnan, Ga. *6A-2*
Piekaar, Richard, Jr., Eastman Kodak Co., 1017 No. Las Palmas, Hollywood 28, Calif. *23A-1*
Pier, Herbert, 9222 Liptonshire Dr., Dallas 31, Texas *10A-1*
Pierce, Edward A. Jr., 3426 Floral St., Silver Spring, Md. *14AF-4*
Pierson, Ellis R., The Chemstrand Corp., Pensacola, Fla. *33A-1*
Pierson, Roy A., 860 S. Rariton, Denver 23, Colo. *32A-1*
Pieta, Edward T., International Nickel Co. Inc., Guyan River Rd., Huntington, W. Va. *58S-4*
Piggott, James R., 5146 East 22nd Place, Tulsa 15, Okla. *15A-1*
Pillar, John P., 1020 Pine S.E., Republic Steel Corp., Warren, O. *24S-3*
Pinegar, James J., Columbia-Geneva Steel Corp., USC., P. O. Box 510, Provo, Utah *50A-2*
Pinger, Roland W., 53 Tunnel Rd., Berkeley 5, Calif. *12S-4*
Pinkston, Samuel H. Jr., 1217 Melrose Ave., Winston-Salem N. C. *21A-2*
Pintenich, Ben, 8119 Whitehaven Dr., Parma 29, Ohio *7S-4*
Pinto, Michael, Pioneer Engr. & Mfg. Co., 19669 John R., Detroit 3, Mich. *47S-4*

Pirtle, PFC Jack W., US 54166813, H. & S. Co., 802nd E.A. Bn., APO 929, Box 163, San Francisco, Calif. *0A-1*
Pischel, Carl S., 620 N. Ladera Vista Dr., Fullerton, Calif. *23S-4*
Pittman, Merle L., 816 Bassett Rd., Westlake, Ohio *7AF-4*
Pitts, D. Milton, 621 Freyer Dr., Marietta, Ga. *6S-4*
Pitts, Richard W., 2305 Las Casas, Brownsville, Texas *0A-1*
Placke, Harry E., 1020 Vacationland Dr., Cincinnati 31, Ohio *8A-2*
Plaggemier, Henry F., 1970 E. 221st St., Euclid 17, Ohio *7S-4*
Plaisted, Norman L., 1853 N. Star Rd., Columbus 12, Ohio *1A-2*
Platt, William J., Stanford Research Institute, Menlo Park, Calif. *12S-4*
Platten, Jack R., 6004 N. 39th St., Milwaukee, Wisc. *45S-4*
Playle, George A., 352 Retford Ave., Cranford, N. J. *5A-2*
Plemmons, Julian M., R. #1, Beeson Dairy Rd., Walkertown, N. C. *21S-4*
Plewes, John E., IBM Corp., Rochester, Minn. *0A-1*
Plourde, Albert M., 107 Dundee Circle, St. Louis 15, Mo. *16A-1*
Plummer, Frederick C., 141 Oak Place, Pittsburg, Calif. *12S-4*
Poage, Scott T., 2102 Stanford Lane, Austin, Texas *0A-1*
Podell, Harold, 2335 State Rd., Apt. 4, Cuyahoga Falls, Ohio *52A-1*
Pohl, John G. Jr., 27 Highland Ave., High Bridge, N. J. *5AF-4*
Pohle, Charles C., 7107 Carnell, University City 5, Mo. *16A-1*
Poli, David L., 2515 Frances St., N.E., Albuquerque, N. M. *59A-1*
Polinsky, Albert S., 730 Clark St., Ridgefield, N. J. *5A-2*
Polishook, Burton H., 1528 S. Negley Ave., Pittsburgh 13, Pa. *3A-1*
Polk, Edward J., General Motors Institute, Flint, Mich. *0A-1*
Pollack, Sidney J., 6 Brinkerhoff Ave., Teaneck, N. J. *61A-2*
Pollak, Benjamin, 75-30 67th Drive, Middle Village 79, New York, N. Y. *5A-2*
Pomeroy, Glen, 932 State St., Bettendorf, Iowa *46A-2*
Pompura, Joseph E., 11 S. Forest Ave., Youngstown 6, Ohio *24A-1*
Poole, Ray V., 1531 Harding St., Winston Salem, N. C. *21A-2*
Poore, Daniel M., 1805 Ridge Rd., North Haven, Conn. *0A-1*
Pope, E. Marion, 1805 Shadowlawn, Jacksonville, Fla. *27A-2*
Pope, Wilfrid R. Jr., 80 Finucane Rd., Rochester 23, N. Y. *44A-2*
Poplava, Edward E., 328 Ohio St., Sharon, Pa. *24A-1*
Porter, Robert L., 270 Clinton Ave., New Rochelle, N. Y. *5A-2*
Porter, Robert Nelson Jr., 524 Sterling St., Norfolk 5, Va. *0A-1*
Portmess, Robert R., 3067 W. 3180 South, Salt Lake City, Utah *50A-2*
Poston, Irvin E., 2232 Fisher St., Speedway 24, Ind. *35A-2*
Posz, Charles L., U. S. Steel Corp., Gary Sheet & Tin Mill, Station H., Gary, Ind. *53S-4*
Potter, Thomas C., 3311 Grandview Ave., Louisville 7, Ky. *18A-1*
Potts, William J., 986 Peralta, Albany, Calif. *12A-1*
Powell, John T., 3626 W. Liberty St., Cincinnati 5, Ohio *8S-4*
Powell, Marvin M., Hillside Apts., #2R., Camp Hill, Pa. *0A-1*
Powell, William M., Arlington Towers, J-642, Arlington 9, Va. *14AF-4*
Power, Richard J., 1942 Northview Rd., Rocky River 16, Ohio *7A-2*
Powers, James E., Colaparchee Rd., Macon, Ga. *55A-1*
Powers, Joseph H., Ely Rd., Farmington, Conn. *0S-4*
Powers, Richard J., The Gamewell Co., Newton Upper Falls, Mass. *30S-4*
Powers, Thruman D., P. O. Box 1041, Texas City, Texas *22A-1*
Prashker, Eugene, 820 East 10 St., Brooklyn 30, N. Y. *5A-2*
Prather, Donald E., 3810 Silsby Ave., Cleveland 11, Ohio *7A-2*
Prather, William E., 800 Wilson Ave., Tullahoma, Tenn. *64S-4*
Pratt, Maurice D., 9021 Wildwood Ave., Sun Valley, Calif. *23A-1*
Pravitz, Kenneth L. Jr., Fiber Board Products, Inc., Ind. Engr. Antioch Div., 2nd & "L" Sts., Antioch, Calif. *12A-1*
Pray, Louis Clark, 1128 No. 4th St., Fort Dodge, Iowa *0A-1*
Preble, Galen W., 451 S. Michillinda, Pasadena 10, Calif. *23A-1*
Presgrave, Ralph, York Knitting Mills, Inc., Toronto, Ontario, Canada *0F-0*
Press, Bernard C., 427 Pascack Rd., Westwood, N. J. *61A-2*
Press, Irving, 118 Medford Rd., Dumont, N. J. *5A-2*
Preussel, Willard G., Western Electric Co., Lexington Rd., Winston Salem, N. C. *21S-4*
Previtt, Joseph P., 1419 Bellaire Place, Pittsburgh 26, Pa. *3A-1*
Priebat, Gerald M., 439 W. 88th Terrace, Kansas City 14, Mo. *0A-1*
Priest, Russell A., National Supply Co., 3320 Bishop St., Toledo, Ohio *36A-1*
Prince, Ralph P., Agricultural Engr. Dept., Penna. State University, University Park, Pa. *0A-1*
Prior, Harry J., Booz Allen & Hamilton, 4402 White Henry-Stuart Bldg., Seattle 1, Wash. *20S-4*
Pritchard, Paul J., 22 Frontier Dr., Poland, Ohio *24A-1*
Prociak, Myron J., 110 Roney Lane, Syracuse, N. Y. *13A-2*
Proctor, Russell McKenzie Jr., 1716 Mayview Rd., Jacksonville 5, Fla. *27A-2*
Proctor, William L. Jr., P. O. Box 831, Badin, N. C. *21A-2*
Profant, Milton J., 138 Shriver Ave. S.E., Massillon, Ohio *19A-1*
Prosser, Benjamin D., 6428 S. Lowe Ave., Chicago 21, Ill. *25S-4*
Prosser, David C., Paul Bunyan Bait Co., 1307 Glenwood Ave., Minneapolis, Minn. *38S-4*
Prosser, Robert G., Milwaukee Gas Light Co., Milwaukee 1, Wisc. *45S-4*
Provost, Robert G. Sr., 846 Chestnut, Apt. 3, Gadsden, Ala. *0A-1*
Pruce, Peter P., 241 S. Doheny Dr., Beverly Hills, Calif. *23A-1*
Pruett, Dresslar M., 121 Alderman, Aiken, S. C. *0A-1*
Pruett, Thomas A., 2265 Fairhaven Cir. N.E., Atlanta 5, Ga. *6A-2*
Pruitt, Von Alan, 532 Park Ave., Bradley, Ill. *0A-1*
Puchalski, Joseph B., 339 Boston St., Syracuse, N. Y. *13A-2*
Puckett, Johnny R., 110 N. Church St., Mt. Olive, N. C. *0A-1*
Pugliese, Michael J., YMCA 825, Akron, Ohio *52A-1*
Pulliam, Andrew B., 610 N. Park Ave., LaGrange Park, Ill. *25S-4*
Purcell, Steven R., 1 Cedar St., Worcester, Mass. *30A-2*
Purdom, Clyde H., 406 E. Southside Court, Louisville, Ky. *18A-1*
Pusch, James L., 229 32nd Place, Manhattan Beach, Calif. *23A-1*
Putnam, Edgar G., 6520 16 Ave., N.E., Seattle 15, Wash. *20S-4*
Putnam, Rear Adm. Frank R., Apt. 207, 4614 5th Ave., Pittsburgh, Pa. *3AF-3*
Putney, Homer L., American Viscose Corp. Nitro, W. Va. *58A-2*
Pyle, George E., 12 Crestview Lane, M.R. #1, Milford, Ohio *8S-4*
Pytel, Leonard P., 15 Carmel Ave., El Cerrito 8, Calif. *12A-1*

Quaney, Robert A., 13904 Roscoe Blvd., Panorama City, Calif. *23A-1*
Querbach, Edward E., 15 Huntington Ave., Lynbrook, L. I., N. Y. *5S-4*
Quick, George H., 3810 St. Germaine Court, Louisville 7, Ky. *18A-1*
Quick, Joseph H., Mill Road, Westboro, Mass. *30S-4*
Quilici, Ray A., 1306 Hale Dr., Concord, Calif. *12A-1*
Quinby, William K. Jr., General American Transportation Corp., Masury, Ohio *24A-1*
Quinn, Thomas J., P. O. Box 827, Daingerfield, Texas *60A-2*

Rabstejnek, Jr., Geo. J., 69-12 38th Ave., Woodside 77, N. Y. *5A-2*
Rack, Charles W., Oakite Products, Inc., 19 Rector St., N. Y., N. Y. *5A-2*
Radford, Jack F., % Florence Stove Co., 2307 W. Stantion St., Kankakee, Ill. *0S-3*
Radomski, Jr., Joseph E., Kimberly Clark Corp., Kimberly, Wis. *0A-1*
Raff, Dwight E., 800 Cottage Grove Rd., Bloomfield, Conn. *0A-1*
Rafique, Muhammad, L.E.E. (Pb) A.M.A.I.I.E., Assist. Section Officer FZ/1, Pakistan Ord. Factories, Wah Cantonment, W. Pakistan *0A-1*
Rahning, Fred, 2367 Moline, Aurora, Colo. *32A-1*
Railey, John E., 2749 N.W. 20th St., Oklahoma City 7, Okla. *57A-2*
Raimondo, Peter, 714 61st St., Brooklyn 20, N. Y. *5A-2*
Raines, John N., Box 1979, Tulsa, Okla. *15A-1*
Ralston, Robert H., 3081 Pine Gully, Houston, Tex. *22S-4*
Ramber, Marvin P., Fla. Power & Light Co., P. O. Box 3100, Miami 30, Fla. *40A-1*
Ramsey, Andrew C., 131 Brookwood Dr., Marietta, Ga. *6A-2*
Ramsey, Richard R., R. D. #1, New Wilmington, Pa. *24A-1*
Ranan, Benjamin Z., Lassett St. & NYC R. R., % Great Lakes Stamp Co., Toledo 5, Ohio *36A-1*

Rand, Robert A., Box 353, Point Comfort, Tex. *22A-1*
Randolph, James H., 8807 Cimarron, Los Angeles 47, Calif. *23A-1*
Randolph, Lacey L., 117 Central Ave., Wood River, Ill. *16A-1*
Ransom, Nealand L., Box 224, Hurley, N. M. *59A-1*
Raskin, Seymour H., 706 Terrace Plaza Bldg., Cincinnati 2, O. *8S-4*
Rathe, Alex W., 165 Westchester Ave., Thornwood, N. Y. *5S-4*
Rauch, Jr., Harry A., 4710 Bell, Apt. 1, Houston 23, Tex. *22A-1*
Raven, Julius S., 6556 Rosemoor, Pittsburgh 17, Pa. *3S-3*
Raven, Roland R., 405 Carswell Terr., Arlington, Tex. *10A-1*
Ray, Charles L., Route 3, Kingsport, Tenn. *17A-1*
Rayl, Allen B., 508 Holly Lane, Kokomo, Ind. *35AF-4*
Raymond, Jr., Murray R., 4409 Rose St., Seattle 18, Wash. *20A-2*
Raynor, Harry T., 343 W. Oakwood Blvd., Redwood City, Calif. *37S-4*
Read, Austin M., 2939 Gaston Ave., Knoxville, Tenn. *11A-2*
Reagan, Creed H., 131 E. 64th, Savannah, Ga. *26S-3*
Reardon, Daniel J., 6369 Lewis Ave., Long Beach 5, Calif. *23A-1*
Reardon, Douglas W., Sears, Roebuck & Co., 925 S. Homan Ave., Chicago, Ill. *25S-4*
Rears, Jr., Geo. P., 632 Ninth St., Apt. 3B5, Niagara Falls, N. Y. *49A-1*
Rechnitz, Max H., 2475 Field St., Denver 15, Colo. *32A-1*
Redd, Robert O., 5532 Emerson Ave., Worthington, O. *1S-4*
Reddy, John F., Supervisor Planning, Gen. Elec. Co., 166 Broad St., Fitchburg, Mass. *0A-1*
Redington, Malachi J., 8603 Lanier Dr., Silver Spring, Md. *14AF-4*
Reece, Sr., F. Daniel, 619 Camellia Circle, Warner Robins, Ga. *55A-1*
Reed, Charles M., 4840 Baptist Rd., Pittsburgh 27, Pa. *3S-3*
Reed, Elmer N., 619 Fairway Dr., Washington Court House, O. *0A-1*
Reed, E. Malcolm, 3606 Grand Ave., Middletown, O. *8S-4*
Reed, Horace, 310 Summer St., Buffalo 22, N. Y. *49A-1*
Reed, Kersey H., 1320 Donnell, Wichita 9, Kansas *56AF-4*
Reed, Jr., Ralph A., 552 Westview Dr., Winston-Salem, N. C. *21A-2*
Reed, Jr., Ruddell, 542 Lynn St., Ridgewood, N. J. *5A-2*
Reed, S. Kyle, Whitower Dr., R. #14, Knoxville, Tenn. *11A-4*
Reed, Jr., Stephen A., Columbia Geneva Steel Co., Pittsburg, Calif. *12A-1*
Reed, Stuart M., 22520 Heinze St., Dearborn, Mich. *47S-4*
Reed, William A., 1069 Glenwood Ave., S.E., Atlanta, Ga. *6A-2*
Reeve, Jr., Brooke, P. O. Box 1159, Savannah, Ga. *26A-1*
Reeves, Harold S., 181 Mayhew Dr., So. Orange, N. J. *5A-2*
Reevy, John H., 5038 Mahood Dr., Huntington 1, W. Va. *58S-4*
Regen, Arthur A., 42-04 Layton St., Elmhurst 73, N. Y. *5A-2*
Rehkemper, Alan C., 4300 A Linton, St. Louis, Mo. *16A-1*
Rehnquist, George D., Box 309A, R. #2, 16 Hillside Dr., Plainfield, Ind. *0AF-3*
Reichard, Kenneth J., 808 Milligan, Crawfordsville, Ind. *35A-2*
Reichenbach, John H., 2131 Dawnlight, Columbus 11, O. *1AF-4*
Reichert, Kenneth P., 1014 Scribner St., Maumee, O. *36A-1*
Reichert, Wm. F., 302 Placid Dr., San Antonio 1, Tex. *39A-2*
Reid, Harold R. D. #2, Sharpsville, Pa. *24S-3*
Reid, John W., 14244 Puritas Ave., Cleveland 11, O. *7S-4*
Reidy, Nicholas D., 7919 S. Harvard Ave., Chicago 20, Ill. *25A-1*
Reigle, John, Rt. 6 Box 762, Nachand Lane, Louisville 7, Ky. *18S-3*
Reilly, Edward F., 121 Amersfort Place, Brooklyn 10, N. Y. *5AF-4*
Reimert, R. Philip, Materials Handling & Packaging Div., Reynolds Metals Co., Richmond, Va. *14A-2*
Reimlinger, Geo. E., R. R. #2, Zionsville, Ind. *35S-4*
Reinbold, Thomas D., 43 S. Spring Ave., La Grange, Ill. *25A-1*
Reinert, Louis R., United Air Lines, Operating Base, Stapleton Air Field, Denver 7, Colo. *32A-1*
Reinhart, Edward A., 1005 Ludwig Park, Dr., Ft. Wayne, Ind. *34S-3*
Reinheimer, Warren E., 116 Andrews Rd., Jamesville, N. Y. *13S-4*
Reinsmith, James M., Shenango China Inc., P. O. Box 120, New Castle, Pa. *24A-1*
Reinsvold, Robert H., 2134 Cedar St., White Bear Lake 10, Minn. *38A-2*
Reis, Irvin L., 1019 West John, Champaign, Ill. *0A-1*
Reitz, Robert E., 222 Avon Rd., Tonawanda, N. Y. *49A-1*
Rembisz, Eugene R., 4549 E. 45th St., Tulsa, Okla. *15A-1*
Renninger, Wm. M., 7701 Airport Blvd., Los Angeles 45, Calif. *23A-1*
Ress, Thomas E., 1671 St. Charles Ave., Lakewood 7, O. *7S-4*
Reuter, Robert E., 3295 Romona St., Palo Alto, Calif. *37A-1*
Reynolds, Jr., Arthur T., 65 Central St., Peabody, Mass. *30A-2*
Reynolds, Harry A., R. D. #1, Waterford-Rexford Rd., Waterford, N. Y. *0A-1*
Reynolds, Howard W., Box 425, Uxbridge, Ontario, Canada *0A-1*
Reynolds, Lyman H., 302 Lakeview Park, Rochester, N. Y. *44A-2*
Reynolds, Jr., Lt., Richard C., O. M. R., Box 133, Maxwell AFB, Montgomery, Ala. *0A-1*
Rhea, Robert H., 2637 Gardiner Lane, Louisville 5, Ky. *18S-3*
Rhea, Rodney E., 665 Pullman Rd., Hillsborough, Calif. *12A-1*
Rheinecker, Leonard J., 3222 Douglas Ave., E. St. Louis, Ill. *16AF-3*
Rhodes, Arthur W., Carbide & Carbon Chem. Co., 437 MacCorkle Ave., So. Charleston, W. Va. *58S-4*
Rhodes, Grover F., Gen. Elec. Co., 1635 Broadway, Ft. Wayne, Ind. *34S-3*
Rhodes, Jr., Millard D., 3362 Medina, Ft. Worth, Texas *10S-3*
Rice, Geo. L., 1901 Jefferson St., Hollywood, Fla. *0A-1*
Rice, Jr., Harry C., Combustion Engr. Inc., 911 W. Main St. Chattanooga 1, Tenn. *54S-3*
Rice, Howard S., Frozen Food Div., Stokely-Van Camp, Inc., P. O. Box 61, Mt. Vernon, Wash. *20A-2*
Rice, Marvin G., 4408 Calle Feliz, Phoenix, Ariz. *0A-1*
Rice, Jr., Robert S., Factory Management & Maintenance, 330 W. 42nd St., N. Y. 36, N. Y. *5S-4*
Rice, Thomas E., 534 Jeanne Dr., Memphis, Tenn. *28A-2*
Richard, Kenneth J., 808 Milligan, Crawsfordsville, Ind. *35A-2*
Richards, Lucien M., % Continental Can Co., P. O. Box 1648, Sacramento, Calif. *43S-4*
Richards, Robin D., 1107-B Ocean Park Blvd., Santa Monica, Calif. *23A-1*
Richards, Wallace J., 47-R Franklin Apts., Savannah, Ga. *26S-3*
Richards, Wm. R., 3070 Somerset Dr., Macon, Ga. *55A-1*
Richardson, James A., 46 Poplar Dr., Rochester, N. Y. *44S-4*
Richardson, Wallace J., 350 Constitution Ave., Hellertown, Pa. *0S-3*
Richey, Jr., Walter P., 1417 Connally Terr., Arlington, Tex *10AF-3*
Richins, Leo, Box 510 Provo, Utah *50S-4*
Richman, Prof. Eugene, Ind. Engr. Dept., Univ. of S. Calif., School of Engr., Los Angeles 7, Calif. *23S-4*
Richmond, Martin, Emerson Radio & Phonograph Corp., 14th & Coles St., Jersey City, N. J. *5S-4*
Richmond, Thomas, 6422 S. Talman Ave., Chicago 29, Ill. *25A-1*
Richter, Herbert R., 2650 S. Hanley Rd., Maplewood 17, Mo. *16A-1*
Richter, Nathaniel G., 1532 Benson St., Bronx 61, N. Y. *5A-2*
Richter, Ralph W., 4105 Frankfort Ave., Louisville 7, Ky. *18A-1*
Rick, Loren L., 325 W. 6th Ave., Gary 3, Ind. *53A-1*
Rickard, Ralph C., 216 Second, Sharon, Pa. *24A-1*
Ricker, Chester J., 712 Kentucky St., S.E., Albuquerque, N. M. *59A-1*
Rickwald, Raymond C., 520 Forum, Louisville, Ky. *18S-3*
Riddle, John B., 180 Walter Hays Dr., Palo Alto, Calif. *37S-4*
Ridge, Warren J., 211 E. 174th St., Seattle, Wash. *20A-2*
Ridout, John, Tarheel, Melbourne, Fla. *0A-1*
Riefler, Donald J., 1062 Parkside Dr., Alliance, O. *19A-1*
Riester, Robert L., 4270 Adams St., Gary, Ind. *53S-3*
Riffe, Jay A., 1317-C Quarrier St., Charleston, W. Va. *58S-4*
Rigassio, James L., 1004-79 St., N. Bergen, N. J. *61A-2*
Rigby, John K., 2515 Alanmede Rd., Louisville 5, Ky. *18A-1*
Rile, Charles W. 325 Seneca Park Forest, Ill. *25A-1*
Riley, Harry H., 1847 Silverwood Dr., Concord, Calif. *12A-1*
Riley, Wm. O., P. O. Box 1714, Atlanta, Ga. *6A-4*
Riley, Wm. S., 737 Hebert St., Baton Rouge, La. *41A-1*
Rindt, Franklin J., 1410 Wynn Terr., Arlington, Tex. *10A-1*
Rindt, John R. 1722 Ballaway, Grand Prairie, Tex. *10A-1*
Ringler, Clarence L., 814 Windsor Ave., S.W., Roanoke, Va. *0S-3*
Rintala, Robert B., 612 N. Sweetzer, Apt. 102, Los Angeles 48, Calif. *23A-1*

Riordan, Thomas S., 26 Summer St., Saugus, Mass. *0A-1*
Risimini, Ralph A., 1780 Yorktown Rd., Cincinnati 37, O. *8S-4*
Ristow, Jr., Edward W., 14815 E. Cedar Springs Dr., Whittier, Calif. *23A-1*
Ritchey, James G., 416 Christopher Pl., Louisville 14, Ky. *18S-3*
Ritchey, Prof., John A., 348 W. Oak St., W. Layfayette, Ind. *35A-2*
Ritchie, Wm., 1509 Tarlton Ave., Cleveland 9, O. *7AF-4*
Ritter, Gerald L., 40 F Georgian Ct., Bergenfield, N. J. *61A-2*
Ritter, Robert E., 29815 W. Willowick Dr., Willowick, O. *7A-2*
Ritter, Thomas L., 1306 W. First Ave., Columbus 12, Ohio *1A-2*
Ritzel, Arthur R., 5446 Finkman, St. Louis 9, Mo. *16A-1*
Rivett, Kenneth H., 1927 Otoe St., Lincoln, Neb. *0A-3*
Rix, Roy W., Cleveland Elec. Ill. Co., 75 Publee Sq., Cleve. 1, O. *7A-2*
Roach, Jr., James E., 3940 Ashford Rd., N. Atlanta 19, Ga. *6A-2*
Robbins, Kenneth H., 25412 Conover Dr., Bay Village, O. *7S-4*
Robbins, Lonnie J., 3813 McNab Ave., Long Beach 8, Calif. *23A-1*
Roberson, Joe B., 3700 Potomac, Dallas, Tex. *10A-1*
Roberson, Kenneth D., 1757 W. Haskell Pl., Tulsa, Okla. *15A-1*
Roberts, Donald A., 2633 La Vista Rd., Decatur, Ga. *6A-2*
Roberts, Donald L., 182 King St., Maryville, Tenn. *11A-2*
Roberts, James B., 1040 Cantor Rd., N.E., Atlanta, Ga. *6A-4*
Roberts, John F., 4066 Kenny Rd., Columbus 14, O. *1A-4*
Roberts, John S., 410 S. Germantown, Chattanooga 11, Tenn. *54A-1*
Roberts, Lewis B., 4450 E. Admiral Pl., Tulsa, Okla. *15AF-3*
Roberts, S. Jay, 217 Flint Dr., Fairfield, Ala. *9A-4*
Robertson, Donald B., Cleveland Graphite Bronze Co. 17000 St. Clair Ave., Cleveland 10, O. *7A-2*
Robertson, Hugh L., 274 Fig Ave., Chula Vista, Calif. *29S-4*
Robertson, Oliver G., % H. J. Williams, 3175 Warington Rd., Shaker Hts., O. *7S-4*
Robertson, Thomas M., White Plains, N. C. *21A-2*
Robeznieks, Karl E., 2682 Tennyson Rd., Cleveland 4, O. *7A-2*
Robinson, Arthur M., 5906 Ardmore, Apt. 19, Houston, Texas *22A-2*
Robinson, Carel, Robinson & Robinson, 600 Union Bldg., Charleston 21, W. Va. *58S-4*
Robinson, Charles V., Proctor & Gamble Mfg. Co., Power Inn & Fruitridge Rd., Sacramento, Calif. *43A-2*
Robinson, Frank L., 1075 Warfield Ave., Oakland, Calif. *12S-4*
Robinson, James R., 1765 Alameda Ave., S.W., Birmingham 11, Ala. *9A-2*
Robinson, Jr., L. Frank, 3938 Wedgwood Way, Louisville 5, Ky. *18A-1*
Robinson, Jr., Mark, M., 42 Admiral Blvd., Dundalk 22, Md. *42A-2*
Robinson, Neil H, Robinson & Robinson, 600 Union Bldg., Charleston 21, W. Va. *58S-4*
Robinson, Robert D., Humphrey's Gold Corp., P. O. Drawer 631, Starke, Fla. *27A-2*
Robinson, Standley O., 46 Lafayette Rd., Newton 62, Mass. *30S-4*
Robinson, Wm. C., 518 Tulane, San Antonio 1, Tex. *39A-2*
Robison, Raymond B., Clayton & Lambert Mfg. Co., 1701 Dixie Highway, Louisville 10, Ky. *18A-1*
Robison, Stuart, W., P. O. Box 906, Trona, Calif. *23S-4*
Robson, W. David, 3671 Hackett Ave., Long Beach 8, Calif. *23S-4*
Rochelle, Jr., Roy, 1725 Lake Ave., Knoxville, Tenn. *11S-4*
Rockafellow, H. Ralph C., 12790-12798 McKinie Ave., Chino, Calif. *0A-1*
Rockhold, Jr., Frederick W., 15865 Eastwood Detroit 5, Mich. *47A-2*
Rockwell, Thomas H., 395 S. Selby Blvd., Worthington, O. *1A-2*
Rockwell, Jr., W. F., Rockwell Mfg. Co. 400 N. Lexington Ave., Pittsburgh 8, Pa. *38-3*
Rode, Anthony F., 63 Circle Dr., Hicksville, L. I., N. Y. *5A-2*
Roessle, Rudolph B., 613 Early St., Savannah, Ga. *26S-3*
Rogers, Bruce L., 409 Wilson Ave., Washington, Pa. *38-3*
Rogers, Herbert E., P. O. Box 957, Louisville 1, Ky. *18A-1*
Rogers, John B., 13201 Laguna, Houston, Tex. *22A-1*
Rogers, John M., Harris, N. Y. *5A-2*
Rogers, Nelson K., Waterman Steamship Corp., 61 St. Joseph St., Mobile, Ala. *0A-1*
Rogers, Jr., Richard S., Carbide & Carbon Chem. Co., Charleston, W. Va. *58A-2*
Rohde, Harry O., % Amer. Cyanamid Co., S. Cherry St., Wallingford, Conn. *0S-3*
Rohde, John H., The Chemstrand Corp., P. O. Box 1507, Pensacola, Fla. *33A-1*
Rohr, Robert J., Eastman Kodak Co., Kodak Park, Rochester, N. Y. *44S-4*
Rohrbach, Jonas A., 245 Kelly St., Hobart, Ind. *53A-1*
Roland, E. Arno, 62 Market St., Poughkeepsie, N. Y. *0A-1*
Roloff, Robert R., G.E. Guest House, Rome, Ga. *0A-1*
Rolon, Javier, 5116 Beech, Bellaire, Texas
Roman, Geo. S., 137 Falcon St., E. Boston, Mass. *30A-2*
Roman, Joseph E., 4444 Lesher Dr., Dayton 9, O. *2A-4*
Romer, Harold R., R. D. #2, Canastota, N. Y. *13A-2*
Romig, John R. 13309 Harlan Ave., Lakewood 7, O. *7S-4*
Ronecker, John E., 5826 Sunshine, St. Louis 9, Mo. *16A-1*
Ronning, Albert J., Rt. 6, St. Paul 9, Minn. *38A-2*
Roof, William E., 905 S. Lafayette St., Florissant, Mo. *16S-3*
Rooker, Marvin R., 420 E. Church St., Ahoskie, N. C. *0A-1*
Root, Geo. F., 625 Alpine, Boulder, Colo. *32S-3*
Roper, Pvt., John E., US 52401556, 7965 Hq. Co. AU, APO 122, N. Y., N. Y. *0A-1*
Rorie, Jr., Durwood G., 89 Farragut Rd., Cincinnati 18, O. *8A-2*
Rorstad, Alf J., 16716 51st S.E., Bellevue, Wash. *20S-4*
Rosa, Jr., Ercole, 462 Spruce Lane, E. Meadow, L. I., N. Y. *5A-4*
Rosback, Warren R., 615 S. Elizabeth St., Lombard, Ill. *25A-1*
Rose, Lewis E., 755 Linda, Hobart, Ind. *53S-3*
Rose, Lowell L., 2350 W. Ford Pl., Denver 23, Colo. *32A-1*
Rosen, Stuart, 67-43 170 St., Flushing, N. Y. *5A-2*
Rosenberg, Carl S., 24 Leonard Rd., Sharon, Mass. *30A-2*
Rosenberg, Jr., Harry Z., 59 Morgan Parkway, Williamsville 21, N. Y. *49S-3*
Rosenberg, Malcolm, 5 Senders Ct., Hyde Park, Mass. *30A-4*
Rosenfeldt, Martin E., Apartado 1450, Monterey, N. L., Mexico *0A-1*
Ross, Donald L., 4416 Holt, Bellaire, Tex. *22A-1*
Ross, Philip C., 10 Pinecrest Rd., Whitesboro, N. Y. *13S-4*
Rossip, Alfred B., 83-40 Austin St., Kew Gardens 15, N. Y. *5A-2*
Rossitto, Vincent, 69 Mildrum Rd., Berlin, Conn. *5A-2*
Roth, Bernard N., 26 Normanside Dr., Albany 8, N. Y. *0A-1*
Roth, Eric, 4179 Moraga Ave., San Diego 17, Calif. *29A-2*
Rothenberg, Nathan, 109 Abbott St., N. Massapequa, N. Y. *5A-2*
Rothwell, John J., 608 E. Girard Ave., Philadelphia, Pa. *31A-2*
Rotolo, Elio R., Dollin Corp., 600 S. 21st St., Irvington, N. J. *61A-4*
Rountree, Charles W., Island Creek Coal Co., Holden, W. Va. *58S-4*
Rourke, Thomas F., 11777 Cordilleras Ave., Sunnyvale, Calif. *37AF-3*
Rouse, Julius A., 1873 St. Charles Ct., Birmingham, Ala. *9A-2*
Rouse, J. T., 231 Monohan Dr., Louisville, Ky. *18S-3*
Row, Harry S., Box 165, Baton Rouge, La. *41A-1*
Rowane, John P. J., Morganite Inc., 33-2 48th Ave., Long Island City 1, N. Y. *5A-2*
Rowbotham, Charles F. 8366 Fullbright Ave., Conoga Park, Calif. *23A-1*
Rowe, Alan J., 35 Dalewood Drive, Hartsdale, N. Y. *5A-4*
Rowe, Wm. W., 2232 Irwin Ave., Ft. Worth 10, Tex. *10A-1*
Rowell, James H., 1315 Burry, Joliet, Ill. *25A-1*
Rowell, Wm. O., 1636 Eastern Parkway, Louisville 4, Ky. *18A-1*
Rowland, Clarence A. 3813 William Way, Sacramento 21, Calif. *43AF-4*
Roy, Francis V., 703 Noel Dr., Longview, Tex. *60S-4*
Roy, Ramendra Nath, 20 Krishna Rd., Sidgora, Jamshedpur 9, India *4A-S*
Roy, Robert H., Dean, School of Engr., Johns-Hopkins Univ., Baltimore 18, Md. *42S-4*
Roye, Andrew E., 1205 Northeast 36th St., Okla. City, Okla. *57AF-3*
Rubel, Joel, 711 Jackson St., Dallas 2, Tex. *10A-1*
Rubenstein, Albert H., School of Ind. Mgmt., M. I. T., Cambridge 39, Mass. *30A-4*
Rubenstein, Robert, 2532 Davidson Ave., Bronx 68, N. Y. *5A-2*
Rubin, Harvey, 209 W. 104 St., New York 25, N. Y. *5A-2*

Rucker, T. W., P. O. Box 2760, Jacksonville, Fla. *27S-4*
Ruderfer, Sheldon H., 7119 Shore Rd., Brooklyn 9, N. Y. *5A-2*
Rudman, Albert J., 9146 Essex Ave., Chicago 17, Ill. *25A-1*
Rudolph, Jr., Walter M., Eaton Mfg. Co. 739 E. 140th St., Cleveland 10, O. *7S-4*
Ruehl, Donald W., Stephen Mather Rd., Darien, Conn. *5A-2*
Ruff, Geoffrey M., 2462 Alvin St., Mountain View, Calif. *37A-1*
Rundle, Alan, 4038 Iowa, St. Louis 18, Mo. *16A-1*
Runkle, Lloyd Rd., 8409 Riverside Dr., Box 132, Dublin, O. *1A-2*
Runyan, Horace C., 8613 Manire Dr., Houston 24, Tex. *22S-4*
Ruppelt, Charlotte V., 4958 Coro Cove, Coro Lake, Memphis, Tenn. *28A-2*
Russ, John M., 204 E. E. Bldg., State Univ. of Iowa, Iowa City, Iowa *46S-4*
Russ, Raymond W., 420 Washington St., Denver, Colo. *32S-3*
Russell, Elbert F., 19680 Montville Dr., Maple Hts., O. *7S-4*
Russell, Robert E., 808 Rosemary Ave., S.W., Atlanta 11 Ga., *6A-2*
Russell, Ross A., 3039 19th St., N.W., Canton 8, O. *19S-3*
Rust, Jr., Philip G., Richmond Rd., Route 1, Easton, Pa. *0A-1*
Ryan, Eugene D., 1950 Marta Dr., Concord, Calif. *12AF-3*
Ryan, James A., 26 Harbor Lane, Levittown, L. I., N. Y. *5A-2*
Ryan, James T., 164 Ramsey Ave., Yonkers, N. Y. *5A-2*
Ryan, Joseph R., 380 Windson Ave., Glen Ellyn, Ill. *25S-4*
Ryan, Robert E., Crucible Steel Co. of Amer., Spaulding Works, South 4th St., Harrison, N. J. *61S-4*
Ryba, Walter G., Electrolux Corp., Old Greenwich, Conn. *5S-4*
Rynd, Wilbur B., 3908 Sanguinet St., Ft. Worth 7, Tex. *10S-3*

Sabean, Donald R., P. O. Box #273, Weston 93, Mass. *30A-2*
Sabin, James G., 217 W. First St., Corning, N. Y. *48A-1*
Sachs, Benjamin K., 2155 Morris Ave., N. Y. 53, N. Y. *5A-2*
Sadek, Geo., 380 W. Locust St., Newark, O. *1A-2*
Sadewic, Alfred R., 12365 S.W. Tremont, Beaverton, Ore. *0A-1*
Sage, Donald L., 412 Stuart Circle, Richmond, Va. *0A-1*
Sagerty, James P., 3201 Coolidge, Wichita 4, Kansas *56A-2*
Saiki, Megumi, P. O. Box 197, Kilauea, Kauai, T. H. *0AF-3*
St. Clair, Oscar A., Prof., Ind. Engr., Texas Tech. College, Lubbock, Tex. *0S-3*
St. James, Edgar E., The Haloid Co., 6 Haloid St., Rochester, N. Y. *44A-2*
St. Martin, Ronald F., 1710 E. National, Brazil, Ind. *0S-3*
Saita, Louis S., 1511 Fordham Ct., Mountain View, Calif. *37AF-3*
Saintey, Robert C., 75 Parkwood Rd., Rochester 15, N. Y. *44A-2*
Sais, Jose, Apartado 146, Santiago de Cuba, Cuba *0A-1*
Salko, Nicholas I., 18222 Norwich Rd., Livonia, Mich. *47A-2*
Sallee, Floyd B., 1259 Garden Circle, Wyoming, O. *8A-2*
Salmon, Charles R., 433 Broadway, Costa Mesa, Calif. *23A-1*
Saltz, Sanford H., 2205 Rowland Ave., N.E., Canton, O. *19S-3*
Saltzman, Sidney, 223 Seaton Rd., Stamford, Conn. *5S-4*
Salveson, Melvin E., Mgmt. Consultation Services Div., Gen. Elec. Co., 570 Lexington Ave., N. Y. 22, N. Y. *5S-4*
Same, Jr., Elmer W., 274 Sandalwood Dr., Rochester 16, N. Y. *44S-4*
Samers, Bernard N., 7841 68th Rd., Middle Village 79, N. Y. *5A-2*
Sampson, Martin W., Cornell Univ., College of Engr., Ithaca, N. Y. *48S-3*
Samson, David W., 3408 Humboldt Way, Sacramento 21, Calif. *43S-4*
Sandell Albert R., 3027 Sterling Way, Redwood City, Calif. *37A-1*
Sandin, Clarence R., 3516 Anderson Ave., S.E., Albuquerque, N. M. *59A-1*
Sands, Charles D. 121 E. Lutton St., New Castle, Pa. *24AF-3*
Sanford, James S., 19318 Fourth Ave., S., Seattle 88, Wash. *20AF-3*
Sanocki, Leo., 808 N. Inglewood Ave., Inglewood 3, Calif. *23A-1*
Santos, Eligio F., 430 McLinden, Smyrna, Ga. *6A-2*
Sarcinella, Frank A., 29 Winchester Ave., Yonkers 2, N. Y. *5A-2*
Sargent, III, Bryan B., 1591 Peachtree View, N.E., Brookhaven, Atlanta, Ga. *6A-2*
Sarici, Turan, 841 Bayshore Dr., Warrington, Fla. *33A-1*
Sarkans, Ivars, 151 Slocum, Webster Groves 19, Mo. *16A-1*
Satlin, Sheldon, 60 Forest St., N. Arlington, N. J. *61A-2*
Satten, Mortimer, 6065 Henderson Dr., La Mesa, Calif. *29A-2*
Sattenwhite, Henry G., 126 Ingersall Ave., S.W., Knoxville, Tenn. *11A-2*
Satterthwaite, Franklin E., 8 Fuller Rd., Wellesley, Mass. *30S-4*
Sauer, Howard A., Taylor Rd., Honeoye Falls, N. Y. *44A-2*
Sauers, Jr., Glenn E., 1423 Jefferson Ave., N.W., Canton 8, Ohio *19A-1*
Sauget, Vincent L., 143 N. 81st St., Belleville, Ill. *16S-3*
Saunders, Byron W., College of Engr., Cornell University, Ithaca, New York *48S-3*
Saunders, Geo. E., 3336 N.W. 17th St., Okla. City 7, Okla. *57A-1*
Saunders, Wm. B., ACF Industries, Inc., St. Charles, Mo. *16S-3*
Sauter, Lawrence J., 8855 Humphrey Lane, Cincinnati 36, Ohio *8A-2*
Savarino, Joseph A., 19808 Cherokee Ave., Cleveland 19, Ohio *7A-2*
Savitt, Arnold J., 1210 Nelson Ave., New York 52, N. Y. *5A-2*
Sayles, Maynard A., Bemis Bros. Bag Co., 601 S. 4th St., St. Louis, Mo. *16S-3*
Saylor, Charles E., 1209 Airport Rd., Endicott, N. Y. *48A-1*
Saylor, Paul D., 1459 E. Rand, Hobart, Ind. *53A-1*
Scalise, Geo. L., 606 Orchard Dr., Louisville, Ky. *18A-1*
Scapellati, Salvatore, Lockheed Aircraft Corp., Burbank, Calif. *23S-4*
Scarato, Russell F., 4335 DeTonty, St. Louis 10, Mo. *16A-1*
Schacht, Neil, 2405 Crest Ridge, Dallas, Tex. *10A-1*
Schadewald, Edwin C., 716 F Ave., Coronado, Calif. *29S-4*
Schaefer, Julius L., 1 So. Broadway, White Plains, N. Y. *5A-2*
Schaefer, Wm. J., 3988 Maclane, Palo Alto, Calif. *37A-1*
Schafer, Ray E., 25840 Tungsten Rd., Cleveland 32, O. *7AF-4*
Schaffir, Kurt H., 83-45 116 St., Kew Gardens 15, N. Y. *5A-2*
Schaffir, Walter B., 63 Scudders Lane, Glen Head, L. I., N. Y. *5S-4*
Scharff, Alan L., 6207 Jumilla, Woodland Hills, Calif. *23S-4*
Scharff, Sam E., 733 Camelet Lane, Houston 24, Tex. *22S-4*
Schaumburg, Grant W., P. O. Box 510, Provo, Utah *50S-4*
Schechter, Edwin M., 100 Hoyt St., Stamford, Conn. *5A-2*
Scheele, Prof. Evan D., Marquette Univ., Management Center, Milwaukee, Wis. *45S-4*
Scheib, Jr., John C., Grd. Sch., of Bus. Adm., Univ. of Calif. Los Angeles 24, Calif. *23S-4*
Scheirer, Jr., Russell E., 1803 BT Aberdeen Rd., Towson 4, Md. *42A-4*
Schell, John B., 1111 W. 30th, Erie, Pa. *51A-2*
Schell, Jr. Liguori J., 3557 Ludgate Rd., Shaker Hts. 20, O. *7A-2*
Schellenger, Wm. H., 1388 Virginia Ave., Columbus 12, O. *1A-2*
Schenk, Maurice C., Jr., 22241 Gifford, Canoga Park, Calif. *23A-3*
Scherr, Harold M., Box 4218, San Antonio 7, Tex. *39S-4*
Scherrer, Wm. A., Edmont Mfg. Co., 1300 Walnut St., Coshocton, O. *1A-2*
Schetky, Lt., Malcolm O., ComServLant, Box 3, Bldg. 142, Naval Base, USN, Norfolk 11, Va. *0A-1*
Schiewetz, Thomas M., The Standard Register Co., Dayton 1, O. *28-4*
Schirm, Jr., Wm. P., 518 E. 50th St., Savannah, Ga. *26A-1*
Schlaf, Nina L., 1501 16th St., N.W., Wash., D. C. *14A-2*
Schleich, Grant W., Hillcrest Lane, R.F.D. #2, Huntington, N. Y. *5A-2*
Schlichter, Albert G., Box 609, Pharr, Tex. *0A-1*
Schloss, Herbert E., 887 Jefferson Ave., Brooklyn 21, N. Y. *5AF-4*
Schluckebier, J. Phillip, 9 Strathmore Circle, Rochester 9, N. Y. *44A-2*
Schlueter, Hal A., Eimco Corp., P. O. Box 300, Salt Lake City, Utah *50A-2*
Schmid, Wm. K., 337 49th St., Oakland 9, Calif. *12S-4*
Schmidley, Richard N., 1127 Lincoln, Peru, Ill. *0AF-3*
Schmidt, Arthur M., 742 N. 16th, Enid, Okla. *0A-1*
Schmidt, Bill W., 7008 Xerxes Ave., S., Minneapolis 23, Minn. *38A-2*
Schmidt, John L., Yale & Towne Mfg. Co., Lenoir City, Tenn. *11A-2*
Schmidt, Richard E. 13121 Bobby Lane, Garden Grove, Calif. *23A-1*
Schmutz, Wm. L., 409 Wilbur, Oneida, N. Y. *13S-4*
Schnabel, Edward A., 1257 27th St., San Bernardino, Calif. *24A-1*
Schnabel, Robert W., Tobyhanna Signal Depot, Tobyhanna, Penna. *0A-1*
Schnaufer, Meredith W., 566 W. Delason Ave., Youngstown, O. *24S-3*

Schneider, Carl J., 13438 Rosedale Blvd., Wyandotte, Mich. *47A-2*
Schneider, Carroll F., 5507 Warwick Rd., Parma, Ohio *7S-4*
Schneider, Geo. M., 3062 McKinley Dr., Santa Clara, Calif. *37S-4*
Schneider, Irwin R., Ethyl Corp., P. O. Box 341, Baton Rouge, La. *41S-3*
Schneider, Jack B., Toledo Stamping & Mfg., 99 Fearing Blvd., Toledo, Ohio *36A-1*
Schneider, John 711 La Salle Dr., Endwell, N. Y. *48A-1*
Schneider, Marshall C. 50 Rockdale St., Mattapan, Mass. *30A-2*
Schneider, Wm. E., 694 Neldome St., Altadena, Calif. *23AF-3*
Schnoor, Richard H., 171 Forest Ave., Fairfield, Conn. *5A-2*
Schock, J. Frederick, Leeds & Northrup Co., 4901 Stenton Ave. Philadelphia 44, Pa. *31S-4*
Schoeller, Kenneth W., 774 Fairfield Ave., Elmhurst, Ill. *25A-1*
Schoeller, V. Donald, Mgmt. Development Program, Case Institute of Tech., 10900 Euclid Ave., Cleveland 6, O. *7S-4*
Schoenfelt, Paul C., Spicer Mfg. Div., Dana Corp., 4100 Bennet Rd. Toledo 1, O. *36AF-3*
Schofield, Louis S., Dept. 231, Western Elec. Co., Winston-Salem, N. C. *21S-4*
Scholey, Walter L., 61 Woolman Ct., Parma 30, O. *7S-4*
Schonman, Jr., Wm., 132 French St., Bristol, Conn. *0A-1*
Schornack, Geo. A., 1410 S. Sycamore St., Apt. 1, Santa Ana, Calif. *23S-4*
Schorr, Donald G., 9605 Old 3C Highway, Westerville, O. *1S-4*
Schotland, Roy C., 648 41st St., N.E., Cedar Rapids, Iowa *0A-1*
Schowen, Clarence M., Rt. 1, Box 195, Nitro, W. Va. *58A-2*
Schreibeis, John J., 635 N. 119th, Wauwatosa 13, Wis. *45A-2*
Schreiber, Justus T., N.E. Corner 13th & Chelten Ave., Philadelphia 26, Pa. *31A-2*
Schreiber, Saunders A., 1634 Snelling Dr., St. Paul, Minn. *38A-2*
Schreimann, Harold, 3918 Madeline Dr., St. Louis 21, Mo. *16S-3*
Schreiner, Donald A., 530 Winston Dr., M. R., Johnson City, N. Y. *48A-1*
Schriever, Errol G., Southwestern Ind. Electronics Co., 2831 Post Oak Rd., Box 13058, Houston 19, Tex. *22AF-3*
Schroeder, Robert L., c/o Amer. Inst. for Foreign Trade, Thunderbird Field #1, P. O. Box 191, Phoenix, Ariz. *0A-1*
Schubert, Charles E., 2008 First St., Staunton, Va. *0A-1*
Schulenburg, Burton G., 7009 Green Holly, St. Louis 23, Mo. *16A-1*
Schulten, Robert F., 19470 Cranbrook, Detroit 21, Mich. *47A-2*
Schultz, Jr., Prof., Andrew S., Head, Dept. of Ind. Engr., Sibley School Mech. Engr., Cornell Univ., Ithaca, N. Y. *48S-3*
Schultz, Lawrence F., 952 Stannage Ave., Albany 6, Calif. *12A-1*
Schultz, Philip L., Box 1155 Hdq. AMC, Wright Patterson AFB, O. *2S-4*
Schultz, Robert G., 102 Kellum Pl., Winston-Salem, N. C. *21A-2*
Schulz, Ernst, 6325 Ravendale Lane, Dallas 14, Tex. *33S-3*
Schulz, Eugene J., 6425 Fernhurst Ave., Cleveland 30, O. *7A-2*
Schumacher, Charles H., 328 Lexington Dr., Menlo Park, Calif. *37S-4*
Schumacher, Edward M., 7219 Pasadena Blvd., St. Louis County 21, Mo. *16A-1*
Schuyler, E. Glenn, Box 11012, Dallas, Tex. *10A-1*
Schwartz, Allan M., Ind. Engineering, Westinghouse Elec. Corp., 1216 W. 58th St., Cleveland, O. *7A-2*
Schwartz, Edward, 6541 N. Mozart Ave., Chicago 45, Ill. *25A-1*
Schwartz, Herbert O., 2818 74th Ave., #104, Kent Village, Hyattsville, Md. *14A-2*
Schwartz, James W., 157 Capuchino, Apt. 1, Millbrae, Calif. *37AF-3*
Schwarz, Robert R., 23 Millbury St., Grafton, Mass. *0A-1*
Schweinhart, Maurice E., 1617 Nightingale Rd., Louisville 13, Ky. *18A-1*
Schweizer, Robert L., Wales Strippit Corp., 345 Payne Ave., N. Tonawanda, N. Y. *49A-1*
Schwendemann, Edward T., Inland Steel Co., 3210 Watling St., E. Chicago, Ind. *53S-3*
Schwendinger, Royal O. G., 331 Orchard, Webster Groves, Mo. *16S-3*
Schwing, Richard E., 120A Cervantes, San Francisco, Calif. *12A-1*
Schwinne, Carl E., 2263 Indianola, Columbus, O. *1A-2*
Sciabbarrasi, Sevastian A., 815 Ahrens Dr., Houston 17, Tex. *22A-1*
Sciabica, Samuel M., 24434 Garden Dr., Euclid 23, O. *7AF-4*
Sciarro, Jr., Stephen, Fairview Rd., Westboro, Mass. *0A-1*
Sciolino, Samuel, 365 Newburgh Ave., Buffalo 15, N. Y. *49A-1*
Scocca, Armand M., 409 Broadview Rd., Upper Darby, Pa. *51A-2*
Scoggins, Kenneth E., 4015 Kingfisher, Memphis 17, Tenn. *28A-2*
Scott, Ervin E., 1910 N.W. 8th St., Okla. City 6, Okla. *57A-1*
Scott, Eugene A., 1308 11th St., N.W., Canton 3, O. *19AF-3*
Scott, III, John, 5522 Navajo Trail, Atlanta 19, Ga. *6S-4*
Scott, Laurence C., 400 W. Mallroy, Pensacola, Fla. *33A-1*
Scott, Leon H., 201 Memphis St., R. D. #1, Liverpool, N. Y. *13AF-4*
Scott, Jr., Walter, 56 Delaware Ave., Freeport, N. Y. *5A-2*
Scudder, Robert C., 72 Johnson Ave., Binghamton, N. Y. *48S-3*
Searle, Robert E., Bronze Heights, Caldwell, O. *7S-4*
Searles, Raymond M., Corning Glass Works, Corning, N. Y. *48A-1*
Seashore, Richard P., 1590 Sutter, San Francisco, Calif. *12A-1*
Sebastian, C. M., R #3, Hemlock Park, Kingsport, Tenn. *17A-1*
Sebell, Adolph L., Will & Baumer Candle Co., Park St., Syracuse, N. Y. *13S-4*
Seberg, Frank J., 3220 Edmunds St., Seattle 8, Wash. *20S-4*
Seccia, Arthur C., Amer. Airlines, Inc., 100 Park Ave., N. Y., N. Y. *5S-4*
Secord, Jr., Kenneth, 117 Highland Ave., Arlington, Mass. *30S-4*
Sedelmeier, Joseph H., 1645 31st St., N.E., Canton, O. *19AF-3*
Sedenka, Oldry, B. F. Drakenfeld & Co., Inc., Box 519, Washington, Pa. *0S-3*
Sedlacek, Frank J., 1432 Timberline Dr., Bettendorf, Iowa *46A-2*
Seeger, Frank L., 7150 Washington Ave., University City 5, Mo. *16S-3*
Seekins, Jr., Milton L., 62 Harvey Ave., Lockport, N. Y. *49AF-3*
Seelbach, Donald E., 75 Shapter, Columbus 14, O. *1A-2*
Segal, Perry, 1701 Sherwood Ave., Apt. D, Baltimore 14, Md. *42S-4*
Segale, Jr., Clement L., 799 McDonald Ave., Brooklyn 18, N. Y. *5A-2*
Seggelin, Lawrence N., Bethlehem Steel Co., Fore River Shipyard, Howard St., Quincy, Mass. *30A-2*
Sehlmeyer, Ernst G., 2440 Alvin St., Mountain View, Calif. *37A-1*
Seidler, Isidor B., 10 Crescent Lane, Roslyn Hts., N. Y. *5A-2*
Seif, Donald W., 620 Arlington Ave., McKeesport, Pa. *3A-1*
Seifert, Wm. E., 580 N. 3rd W., American Fork, Utah *50S-4*
Seiken, Stanley, 30 Buchanan Pl., N. Y. City 53, N. Y. *5A-2*
Seinsheimer, Walter G., 706 Terrace Plaza Bldg., Cincinnati 2, O. *8S-4*
Seitzler, Henry E., 1955 Lakehills Parkway, Baton Rouge, La. *41AF-3*
Sekela, Geo., 13632 Rockside Rd., Garfield Hts., O. *7S-4*
Selden, Chester J., 9181 Manor, Detroit 4, Mich. *47A-2*
Self, Norman L., RFD #1, Holly Grove, Ark. *0A-1*
Sell, Milton T., 402 Herrick Ave., E., Wellington, O. *7A-2*
Sellenings, John S., 630 W. Washington, Napoleon, O. *36A-1*
Sellers, Alan, 4607 S. Janice Cl., Memphis, Tenn. *28A-2*
Selogie, Louis A., 8736 Amestoy Ave., Northridge, Calif. *23S-4*
Seltzer, Sol, 3091 Edwin Ave., Ft. Lee, N. J. *5A-2*
Semplinski, Edward, 6515 Forest Ave., Apt. C, Gary, Ind. *54A-1*
Senes, John J., 95 King St., Chula Vista, Calif. *29A-2*
Sensue, John A., 1008 Coal St., Wilkinsburg, Pa. *3A-3*
Sentman, James M., R. R. #3, Troy, O. *2A-2*
Seperack, Reinhold J., 109 E. First St., Corning, N. Y. *48A-1*
Serenbetz, Warren L., Chief Engr., Railway Express Agency, Inc. 219 E. 42nd St., N. Y., N. Y. *5S-4*
Sertl, Clifford A., 33 Shire Oaks Dr., Pittsford, N. Y. *44A-2*
Sessions, Robert E., Gen. Elec. Co., Hermetic Motor Dept., Holland, Mich. *0A-3*
Severson, Ronald R., 29 Park St., Owego, N. Y. *48A-1*
Sexton, Ralph B., 17814 Burnham, Lansing, Ill. *53S-3*
Seymour, Jack, 4818 A Eastwood St., Wichita, Kansas *56AF-4*
Shadle, Wm. D., 21270 Parkwood Ave., Fairview Park 26, O. *7A-2*
Shafer, Raymond E., Dept. of Mech. Engr., W. Virginia Univ. Morgantown, W. Va. *58S-4*
Shaffer, Jr., Lt., Kenneth L., Apt. 5E, 435 Battery Ave., Brooklyn 9, N. Y. *5A-2*
Shaffer, Jr., Lawrence B., 1222 N. 12th, Duncan, Okla. *0A-3*

Shaffer, Lester S., Rockwell Mfg. Co., 401 Newell St., Barberton, O. *52S-3*
Shaffer, Max E., Ind. Engr. Dept., United Airlines, San Francisco Internat'l. Airport, San Francisco, Calif. *37A-1*
Shafran, Robert, 415 Grape St., Vineland, N. J. *0A-1*
Shainis, Murry J., 130-53 225 St., Laurelton 13, N. Y. *58-4*
Shallcross, Thomas J., 1000 W. Crescent Ave., Park Ridge, Ill. *25A-1*
Shalvarjian, Haig J., 724 Laurel Ave., Menlo Park, Calif. *37A-1*
Shane, Jr., Norman A., Shane Mfg. Co., Inc., Evansville, Ind. *0S-3*
Shane, Wm. J., Box 278, West Bend, Wis. *45A-2*
Shaner, Donald R., 215 N. Wright St., Naperville, Ill. *25A-1*
Shapiro, Monroe, 268 S. Center St., Apt. D-2, Orange, N. J. *5AF-4*
Sharp, C. B., 823 Ross Trail, Arlington, Tex. *10A-1*
Sharp, Lee S., 8258 Doris St., San Gabriel, Calif. *23S-4*
Shatz, Benjamin J., 5943 Ogontz Ave., Philadelphia 41, Pa. *31A-2*
Shaw, C. Geo., P. O. Box 18, Provo, Utah *50S-4*
Shaw, 2/Lt. Charles S., Hq. OCAMA, Box 246, Tinker Air Force Base, Okla. City, Okla. *57A-1*
Shaw, Lawrence V., 21 Cottage St., Auburn, N. Y. *13AF-4*
Shaw, Leonard S., 4440 N. Hazel St., Chicago 40, Ill. *25A-1*
Shaw, Murray H., 30815 Willowick Dr., Willowick, O. *7A-2*
Shearer, Jr., John B., 218½ Lee St., Chickasaw, Ala. *0A-1*
Shedden, Shepard T., Eaton Mfg. Co., 739 E. 140th St., Cleveland 10, Ohio *7AF-4*
Sheffield, John P., 331 First Ave., S.E., Cut Bank, Montana *0A-1*
Shelton, Edgar D., 810 El Paso, Derby, Kansas *56A-2*
Shepler, Robert S., 2453 So. Xavier, Denver 19, Colo. *32A-1*
Sherburne, Henry N., 211 Bainbridge Ave., Pensacola, Fla. *33S-3*
Shereff, Bernard, 3210 Arlington Ave., New York 63, N. Y. *58-4*
Sheridan, Thomas M., Cuba Rd., Stone Hall, Cockeysville, Md. *42A-2*
Sherman, Arthur F., 17 Lincoln Circle, Andover, Mass. *62S-4*
Shields, Royal S., 4940 Plymouth View Dr., Murry, Utah *50AF-4*
Shifflett, Harry W., Dexter, Iowa *0A-1*
Shiltz, Paul W., 830 Elmwood, N. Canton, O. *19AF-3*
Shinn, Lorabee C., International Nickel Co., Inc., Guyan River Rd., Huntington, W. Va. *58S-4*
Shinn, Tyler A., G. E. Co., Electronics Park, Bldg. 7, Syracuse, N. Y. *13S-4*
Shipley, Donald M., 163 Boden Lane, Natick, Mass. *30A-2*
Shipman, Sidney P., 6151 Waterman, St. Louis 12, Mo. *16A-1*
Shirar, Paul T., Eaton Mfg. Co., Axle Div., 739 E. 140th St., Cleveland, Ohio *7S-4*
Shirtz, Raymond L., 662 Hawarden Rd., Springfield, Pa. *31A-2*
Shock, Rogers T., 641 N. Poplar, Fostoria, O. *36A-1*
Short, Donald E., Box 21, Dayton, Ind. *35A-2*
Short, J. Landon, c/o Ind. Engr. Dept., Virginia Polytechnic Ins., Blacksburg, Va. *0A-1*
Shortt, Elmer P., 79 Riverside Dr., Rossford, O. *36AF-3*
Shoup, Neil D., 3801 Washington St., S. Charleston, W. Va. *58A-2*
Shretter, Martin, 54 Park Pl., Midland, Pa. *3A-1*
Shriver, Frank W., 7858 S. Shore Dr., Chicago 49, Ill. *25S-4*
Shultz, Ronald L., 9849-40th Ave., S.W., Seattle 16, Wash. *20AF-3*
Shumaker, Clifford H., Southern Methodist Univ., Dallas, Tex. *10S-3*
Shumate, Basil N., 105 Woodmore, Louisville, Ky. *18A-1*
Shuri, Joseph F., 1705 Merl Ave., Cleveland 9, O. *7S-4*
Shuster, Russell E., 1316 W. 110th St., Cleveland 2, O. *7S-4*
Shustyk, Geo., 233 First Ave., N. Y. 3, N. Y. *5A-2*
Sibson, David S., Olive St., Ashland, Mass. *30S-4*
Siddall, Jr., Dan, P. O. Box 603, Longview, Tex. *60A-2*
Sieck, Jr., Herbert, 1164 Sterling Ave., Berkeley 8, Calif. *12A-1*
Siegel, Bernard L., 215-30 47th Ave., Bayside, L. I., N. Y. *5A-2*
Siegel, Maxwell E., 1518-45th St., Brooklyn 19, N. Y. *5A-2*
Sievers, Geo. A., 4528 Greenfield Ave., Milwaukee 14, Wis. *45S-4*
Sikora, Eugene S., 531 Windsor, Lakeland, Fla. *0A-1*
Siltanen, John C., 101 Prospect Ave., Hackensack, N. J. *58-4*
Silva, Antonio R., Avenida El Paseo No. 19, Los Rosales Caracas, Venezuela *0A-1*
Silver, Norman, 16-34 166th St., Whitestone 57, N. Y. *5A-2*
Silveria, Richard L., 1347 Lillian, c/o J. R. Silvera, San Leandro, Calif. *12A-1*
Silvoy, Edward F., 2608 Hillegas Rd., Ft. Wayne, Ind. *34A-1*
Simmons, Geo. M., 284 Liberty St., Newburgh, N. Y. *0S-3*
Simon, Leonard S., Germanon-Simon Mach. Co., Inc., 408 St. Paul St., Rochester, N. Y. *44A-2*
Simon, Louis M., 125 Oxford St., Brooklyn 35, N. Y. *5A-2*
Simon, Luther H., R-3 Spring Valley Rd., Newark, O. *1A-2*
Simon, Sheldon, 34 Longview Dr., Tuckahoe, N. Y. *5A-2*
Simon, Victor, 290 Madison Ave., New York 17, N. Y. *5A-2*
Simons, Milton R., 2828A Dohr St., Berkeley 2, Calif. *12A-1*
Simonton, Frederick H., 6900 S. Crandon Ave., Chicago 49, Ill. *25S-4*
Sims, E. Ralph, Jr., c/o Alden E. Stilson & Assoc., 245 N. High St., Columbus, Ohio *18-4*
Sims, Wm. R., Stratton-Terstegge-Anchor Div., 300 Culbertson Ave., New Albany, Ind. *18S-3*
Simunic, Frederick J., R. R. #5, Crown Point, Ind. *53A-1*
Sinclair, Donald R., 301 E. 218th, Euclid 23, O. *7A-2*
Sinclair, Jr., Frank, 612 Elaine Dr., Irving, Tex. *10A-1*
Sinclair, Thomas B., 2336 Mason Mill Rd., Decatur, Ga. *6A-4*
Singer, Lt., Ronald M., 1569 Ocean Ave., Brooklyn, N. Y. *5A-2*
Sinke, Donald A., 9033 N. Greenvale, Milwaukee, Wis. *45S-4*
Sinni, Wm. B., 6919 "B" Malahar, Huntington Park, Calif. *23AF-3*
Sipple, Norman A., 1631 Woodside Dr., Erie, Pa. *51A-2*
Sirianni, Nicola C., 121 Center Ave., Bellevue, Pittsburgh 2, Pa. *3A-1*
Sirker, Sankari Prasad, Road No. 4, Qr. No. 12, Farm Area, Kadma Jamshedpur 5, India *4S-S*
Sisco, Robert C., Prod Control Supvr., East Bay Municipal Utility Dist., P. O. Box #616, Oakland 23, Calif. *12S-4*
Sitkin, Charles P., 5117 N. 25 St., Arlington, Va. *14A-2*
Sizelove, Oliver J., Newark College of Engr., 367 High St., Newark 2, N. J. *58-4*
Skedzeleski, Karol A., 190 Derhake Rd., Florissant 21, Mo. *16A-1*
Skinner, Charles B., Box 987, Louisville, Ky. *18S-3*
Skinner, Edward T., 4307 Beechwood Lane, Dallas 20, Tex. *10A-3*
Skiver, Kenneth W., 1126 Montrose, Toledo, O. *36AF-3*
Slabbaert, Romain A., 3555 Cridley Rd., Cleveland 22, O. *7A-2*
Slagle, E. L., 136 E. 17th St., Pittsburg, Calif. *12S-4*
Slaton, Gunther, 64 Winding Wood Rd., Ryeacres, Port Chester, N. Y. *5A-2*
Sleeper, Donald C., 18 Tice Valley Ct., Walnut Creek, Calif. *12AF-3*
Sloan, Erwin H., 936 Red Rd., Teaneck, N. J. *5A-2*
Sloan, Joseph, 233 Penn Blvd., E. Lansdowne, Pa. *31A-2*
Slott, Irving, 136-51 68th Dr., Kew Gardens Hills 67, N. Y. *5A-2*
Smailer, Albert D., Chief Ind. Engr., Fuller Co., Manheim, Pa. *0S-3*
Smiley, Lloyd G., 74 Wellesley Lane, Hicksville, N. Y. *58-4*
Small, Roland E., 725 Sutter, Palo Alto, Calif. *37A-1*
Smalley, Harold E., Office of the Vice Chancellor, School of the Health Professions, Univ. of Pitts., Pittsburgh 13, Pa. *3S-3*
Smith, Jr., Albert J., 5805 Trigg Dr., Ft. Worth 14, Tex. *10A-3*
Smith, Austin G., 647 Valley Dr., (Lake Lucerne), R. D. #1, Chagrin Falls, O. *7S-4*
Smith, Avery C., 611 N. E. 51st St., Miami 37, Fla. *40A-1*
Smith, Dale M., 1712 Flora, No. College Hill, Cincinnati 31, O. *8S-4*
Smith, Dan Dee, 218 N. Harrington Dr., Fullerton, Calif. *23A-1*
Smith, Donald E., 3071 Wallace Rd., Huntington 5, W. Va. *58A-2*
Smith, Donald S., McKinsey & Co., 612 S. Flower St., Los Angeles 17, Calif. *23S-4*
Smith, Douglas D., 857 W. South St., Akron 7, O. *52A-1*
Smith, Sr., Doyle R., 1104 E. 30th St., Winston-Salem, N. C. *21A-2*
Smith, Earl L., 1235 Lander Rd., Mayfield Hts., Cleveland 24, O. *7A-2*
Smith, Forrest R., 4121 No. 18th Drive, Apt. C, Phoenix, Ariz. *0AF-3*
Smith, Frank V., 1550 E. 204 St., Cleveland 17, O. *7A-2*
Smith, Jr., Fulton, Rt. 1, Box 416, Hemet, Calif. *0A-1*
Smith, Geo. A., The Yale & Towne Mfg. Co., 11,000 Roosevelt Blvd., Philadelphia 15, Pa. *31S-4*
Smith, Geo. R., 2206 S. Normandie Ave., Los Angeles, Calif. *23A-1*
Smith, III, Henry G., 1727 Alfred, Aiken, S. C. *0A-1*
Smith, Howard B., 101 Flint St., Layton, Utah *50A-2*

Smith, Ira M., 4549 N. Lockwood Ave., Toledo 12, O. *36A-1*
Smith, James W., 932 Vernon Ave., Winston-Salem, N. C. *21A-4*
Smith, Jesse S., 4562 Amboy, Memphis, Tenn. *28S-4*
Smith, Larry E., 1321 Summit Dr., Cleveland 24, O. *7AF-4*
Smith, Lawrence H., 2060 S. Gilpin St., Denver 10, Colo. *32A-1*
Smith, Leonard J., 2318 Portsmouth Ave., Toledo 13, O. *36A-1*
Smith, Morris, Armco Steel Corp., Middletown Works, Crawford St., Middletown, O. *88-4*
Smith, P. Hilton, 307 Overbrook Rd., Birmingham 9, Ala. *98-4*
Smith, Richard L., c/o Battelle Div., Corp., 505 King Ave., Columbus, O. *1A-2*
Smith, Robert B., 4909 Terrace Trail, Ft. Worth 14, Tex. *108-3*
Smith, Robert H., 171 Gilford Ave., Laconia, N. H. *63A-1*
Smith, Robert J., 15 Pyrex St., Corning, N. Y. *48A-3*
Smith, Robert T., 3584 Parkside Dr., San Bernardino, Calif. *23A-1*
Smith, Robert W., 449 Ainsworth St., Linden, N. J. *61A-2*
Smith, Ross, 15 Dwight Rd., Burlingame, Calif. *12S-4*
Smith, Jr., Sim J., 1101 Oriole Ave., Miami Springs, Fla. *40A-1*
Smith, Spencer B., 340 Riverside Dr., Apt. 7C, N. Y. 25, N. Y. *5A-2*
Smith, Thomas C., 1100 49th St., Birmingham, Ala. *9A-2*
Smith, Thomas J., The Tom Smith Co., P. O. Box 6312, Jacksonville, Fla. *27S-4*
Smith, Wayland P., Mech Engr. Dept. Michigan State College, East Lansing, Mich. *68-3*
Smith, Wm. L., P. O. Box 370, Daingerfield, Tex. *60S-4*
Smoyer, Thomas E., 928 N. 30th St., Allentown, Pa. *0A-1*
Smyly, Wm. E., 12A Murrah Apts. Union, S. C. *0A-1*
Smythe, Vernon C., 3256 Wyoming, Baton Rouge, La. *41A-1*
Snakenberg, Ted R., Deere & Co., 3300 River Dr., Moline, Ill. *46S-4*
Snell, E. Dean, 3409 Club Dr., Los Angeles 64, Calif. *23A-1*
Snelling, Richard K., 847 Highland St., N., St. Petersburg, Fla. *0A-1*
Snider, John A., E. I. DuPont de Nemours, Belle Works, Belle, W. Va. *58S-4*
Snider, Melford D., 1001 Overton Ave., Tarrant 7, Ala. *9A-2*
Snively, Robert C., Box 1130, Del Rio, Tex. *0A-1*
Snodgrass, Laurence E., 1132 Monroe St., S. E., Albuquerque, N. M. *59S-3*
Snow, Edward L., 3780 Bridgeview, Cleveland 21, O. *7A-2*
Snow, F. A., 431 Brookfield Ave., Boardman, O. *24S-3*
Snyder, Charles R., 2301 Woodstock Rd., Columbus 21, O. *1A-4*
Snyder, Ernest, 1933 S. Main St., Kokomo, Ind. *35A-2*
Snyder, Harold C., 3318 Cloverdale, Houston, Tex. *22S-4*
Snyder, Jr., Lester W., 71 Filon Ave., Rochester 9, N. Y. *44S-4*
Snyder, III, Wm. H., 117 Lincoln Way W., New Oxford, Pa. *0A-1*
Sokhi, K. S., Bungalow No. 9, Cross Road No. 4, T. C. Colony, Kadma, Jamshedpur 5, India *48-S*
Sollie, James J., Box 227, Ozark, Ala. *68-3*
Solomon, Abby R., 1560 Ryder St., Brooklyn 34, N. Y. *5A-2*
Sombat, Louis M., 3790 Meadowbrook Blvd., University Hts. 18, O. *7A-2*
Somers, D. V., 1032 Edgewood Dr., Royal Oak, Mich. *47S-4*
Somerville, Robert W., 212 12 73rd Ave., Bayside, L. I., N. Y. *5A-2*
Sommers, Geo. H., R. R. Donnelley & Sons, Co., Sloan St. Plant, Crawfordsville, Ind. *35AF-4*
Sommers, Roy A., 2321 Ardmore Terr., Apt. D, Winston-Salem, N. C. *21A-2*
Sons, V. Clarke, 233 Oneida Ave., N. W., Canton 8, O. *19S-3*
Soper, Robert O., Water St., Selinsgrove, Pa. *0A-1*
Sorel, Arthur, 17819 Roseville Blvd., Roseville, Mich. *47S-4*
Sorensen, Dale A., 3122 Luther St., Winston-Salem, N. C. *21A-2*
Sorensen, Dean E., Ernst & Ernst, 2020 Continental Ill. Bank Bldg., 231 S. LaSalle St., Chicago 4, Ill. *25S-4*
Sorensen, Loren R., 860 Newell Rd., Palo Alto, Calif. *37A-1*
Sorensen, Richard C., 531 Kings Highway, Moorestown, N. J. *58-4*
Soth, Roger M., Hammermill Paper Co., East Lake Rd., Erie, Pa. *51S-4*
Sotoodeh, Fatolah F., 347 E. 17th St., N. Y., N. Y. *5A-2*
Soule, Robert W., Sylvania Elec. Prod., Inc., 2825 Mt. Pleasant St., Burlington, Iowa *0A-1*
Southern, Joseph L., 208 Glenmont Ave., Columbus 14, O. *18-4*
Spacek, Robert W., 3793 E. 182nd, Cleveland 22, O. *7S-4*
Spangler, Ned W., Sylvania Elec. Prod., Inc., 12 Second St., Warren, Pa. *68-3*
Sparkes, Robert W., 91 Dewey Ave., Fairport, N. Y. *44S-4*
Sparks, Nolen, 2567 Evangeline, Baton Rouge, La. *41A-1*
Sparks, Jr., Steward A., 1713 Cahoon St., Atlanta, Ga. *6A-2*
Spaulding, Paul G., Paul G. Spaulding & Assoc., H. & R. Bldg., 107 E. Washington St., Syracuse 2, N. Y. *13S-4*
Spaulding, Jr., Richard, Apt. 8, Argonne Apts., 824 Argonne Ave., Baltimore, Maryland *42A-2*
Spear, John F., 710 Darlington Rd., N. E., Atlanta, Ga. *6S-4*
Specht, Clayton E., Murray-Ohio Mfg. Co., 1115 E. 152 St., Cleveland 10, O. *7S-4*
Speir, Wm. B., The Rust-Engr., Co., 2109 Fifth Ave., No., Birmingham 3, Ala. *9S-4*
Spencer, Jack J., 819 Hillaire Rd., Chestnut Hill, Lancaster, Pa. *0A-1*
Spengler, Manfred L., 1525 Norton St., Rochester, N. Y. *44A-2*
Sperber, Karl P., 918 S. W. Grand Blvd., Corona, Calif. *0A-1*
Sperling, Jesse A., 18 W. 16th St., N. Y., N. Y. *5A-2*
Spitzhoff, Henry W., Robert Heller & Assoc., Inc., 1568 Union Commerce Bldg., Cleveland 14, O. *7S-4*
Spohn, John T., 5221 E. 132nd St., Garfield Hts., O. *7A-2*
Sponder, Stephen B., c/o Baker Bros., Inc., 1000 Post, Toledo, O. *36S-3*
Spore, Regis B., 10307 Sophia Ave., Cleveland 4, O. *7A-2*
Sprankle, Wm. G., 114 33rd St., N. E., Canton, O. *19A-1*
Spray, Jr., Charles F., 116 37th St., S. W. Barberton, O. *52A-1*
Spresser, James P., 3807 Briggs Ave., Erie, Pa. *51A-2*
Springer, Wallace D., 9357 Mary Knoll, Whittier, Calif. *23A-1*
Sprink, Jr., Taylor, 435 Vernon Rd., Jenkintown, Pa. *31A-2*
Sproull, John B., Wailuku Sugar Co., Wailuku, Maui, T. H. *68-3*
Stabile, Anthony, 2319 W. 117th St., Inglewood 4, Calif. *23A-1*
Staeck, James F., 8626 N.E. 7th St., Bellevue, Wash. *20A-2*
Stahl, Raymond F., 9735 Old CCC Highway, Westerville, Ohio *1A-2*
Staines, Richard O., Box 1979, Tulsa 1, Okla. *15A-1*
Staley, Roy, 308 Lee St., Seattle 9, Wash. *20AF-3*
Stamp, Lewis K., 619 Milton St., Alliance, Ohio *19S-3*
Standard, John C., 3309 Lawrence, Houston 18, Texas *22A-1*
Stanton, Wyllys G., Ind. Relations Dept., Wright Aeronautical Div., Wood Ridge, N. J. *5F-0*
Stanton, Wyllys G. Jr., 888 Chambers Rd., Columbus 12, Ohio *1A-2*
Stanul, Walter A., 7131 Blanding Blvd., Jacksonville, Fla. *27S-4*
Stapleton, Patrick G., 16 Lenox Ave., Maywood, N. J. *61S-4*
Stark, Joseph A., North Brunswick Gardens, Apt. A 9, Georges Rd., New Brunswick, N. J. *61A-2*
Staszak, Capt. Leonard A., P. O. Box 262, Inglewood Calif. *23A-1*
Staton, Donnell J., 1815 North Bell, Shawnee, Okla. *57A-1*
Stearns, Stuart G., Merck & Co. Inc., Rahway, N. J. *61A-2*
Steele, Carl A., 516 Thayer Ave., Apt. 201, Silver Spring, Md. *14A-2*
Steele, Fred E., 5877 Ross Rd., Hamilton, Ohio *0A-1*
Steffan, Donald H., 4734 Wentworth Blvd., Indianapolis, Ind. *35A-4*
Stegall, Benjamin I. Jr., 77 Peachtree Hills Ave. N.E., Atlanta, Ga. *6A-2*
Steger, Norman A., 19019 Gault St., Reseda, Calif. *23A-1*
Stegun, Albert A., 504 Edward Hill Apt., Johnstown, Pa. *0A-1*
Steig, Ben L., 1007 N. 62nd, Waco, Texas *0A-1*
Stehr, Joseph Jr., c/o Buckeye Cellulose Corp., Foley, Fla. *6A-2*
Steinberg, Robert L., 315 Leroy Ave., Cedarhurst L.I., N.Y. *5A-2*
Steiner, Stanley, 15735 Norwich Ave., Livonia, Mich. *47S-4*
Steingart, Frank Jr., Dartmoore Rd., Mentor, Ohio *7A-2*
Steinwedell, William E., 30 Indian Hill Rd., Winnetka, Ill. *25A-1*
Stellpflug, John R., 2412 Mahoning Rd. N.E., Canton 5, Ohio *19S-3*
Stelzer, Harold L. Jr., 69 Corona Rd., Rochester 13, N.Y. *44A-2*
Stenstrom, Edward F., 1749 Clairmont Dr., Hendersonville, N. C. *0A-1*
Stenvall, John T., 915 Henrietta St., Martinez, Calif. *12A-1*
Stephens, William T. Jr., 191 Parkwood Rd., Smyrna, Ga. *6A-2*

Stephenson, Charles F., Rt. 7, York, Pa. *6S-3*
Stephenson, Samuel S. Jr., 263 West End Ave., New York 23, N. Y. *5S-4*
Sterley, R. C., The Baldwin Piano Co., 1801 Gilbert Ave., Cincinnati 2, Ohio *8S-4*
Sterling, Charles O., 304 6th St., Oakmont, Pa. *3A-1*
Sterling, Merritt, J., 3 W. Lodges Lane, Bala Cynwyd, Pa. *31S-4*
Sterling, Sheldon R., 2721 Smith Dr., Endicott, N. Y. *48A-1*
Stern, Alvin J., 363 E. 48th St., Brooklyn 3, N. Y. *5S-4*
Stern, Walter S., 40 Congress Rd., Emerson, N. J. *61A-2*
Sternfels, Lewis B., 24 Avalon Circle, Waterbury 10, Conn. *0A-1*
Stetson, Frederick M., 107 E. Philadelphia Ave., Youngstown 7, O. *24S-3*
Steudel, Max, 618 Linwood Ave., Buffalo, N. Y. *49S-3*
Stevens, Carl A., 1932 N. Boston Ave., Tulsa 6, Okla. *15S-3*
Stevens, Harry A. Jr., Vice President, Hills-Sutton Co., P.O. Box 1194, El Paso, Texas *0A-1*
Stevens, John A., 187 Barmont Dr., Rochester 13, N. Y. *44A-2*
Stevens, Leonard E., 8550 Blvd. East, Hudson Heights, N. J. *5S-4*
Stevens, William L., 4803 Franklin St., Bethesda, Md. *14S-4*
Stevenson, John C., 16069 Maplewild Ave. S.W., Seattle 66, Wash. *20A-2*
Stewart, David C., 15 Rice Spring Lane, Wayland, Mass. *30A-4*
Stewart, Frank Wm., 1565 23rd St., Ogden, Utah *50A-2*
Stewart, Gerald R., 3501 W. 82nd Pl., Chicago 29, Ill. *25S-4*
Stewart, James, 1415 Comly St., Philadelphia 49, Pa. *31A-2*
Stewart, Walter E., 4438 W. Lake Harriet Blvd., Minneapolis 10, Minn. *38S-4*
Stiarwalt, Dan W., 9032 E. Shorewood Dr., Apt. 323, Mercer Island, Wash. *20A-2*
Stieman, Thomas H., 13355 Indiana Ave., Chicago 27, Ill. *25A-1*
Stigall, Charles R., 1690 Ronda St., Memphis 8, Tenn. *28A-2*
Stidger, Perry W. Jr., 1132 Crowley Ave., Santa Clara, Calif. *37A-1*
Stilian, G. N., Goldcrest Store Fixture Corp., 90-28 Van Wyck Blvd., Richmond Hill 18, N. Y. *5A-2*
Stillman, Howard R., 1212 16th, Bettendorf, Iowa *46A-2*
Stilson, Donald E., 6206 Heron, Houston 17, Texas *22S-4*
Stine, Joseph P., 423 Park Lane Circle, Orlando, Fla. *0A-1*
Stitzer, Samuel C., 803 N. 17th St., Harrisburg, Pa. *6S-3*
Stivers, D. Alwyn, 1700 Euclid St., St. Paul 6, Minn. *38A-2*
Stockton, Franklin B., Great Lakes Steel Corp., Ecorse, Detroit 29, Mich. *47S-4*
Stogryn, Walter, 282 E. Main St., Somerville, N. J. *61A-2*
Stokes, Robert L., 520 Wisconsin St., N.E., Albuquerque, N. M. *59AF-3*
Stolarz, Lester D., 21 Morningside Ave., Upper Montclair, N. J. *5S-4*
Stone, Albert B., 15235 E. La Calma Dr., Friendly Hills, Whittier, Calif. *23S-4*
Stone, Horace J., Park Towers, Apt. 1015, Houston, Texas *22S-4*
Stone, James E., 1065 So. Tennyson, Denver 19, Colo. *32A-1*
Stone, Wallace L., 126 S. Peterson, Louisville, Ky. *18S-3*
Storeygard, Normann, Minnesota Mining & Mfg. Co., 900 Fauquier Ave., St. Paul 6, Minn. *38A-2*
Stoughton, Bruce C., 1723 Lillian St., Pasadena, Texas *22S-4*
Stoyanoff, Robert, M818 Arlington Towers, Arlington, Va. *14A-2*
Stradley, Lee Van, 3614 Mt. Everest, Dallas 11, Texas *10A-1*
Strange, Charles C. Jr., 393 Fourth St., N.E., Atlanta 8, Ga. *6A-2*
Strange, Robert A. Jr., 115 Matthew Circle, Horseheads, N. Y. *48A-1*
Stratton, Edwin J. D., The J. B. Williams Co., Glastonbury, Conn. *0S-3*
Strickland, Clifford A., 3111 N. Charles St., Baltimore, Md. *42S-4*
Stringfellow, William A., Reynolds Metals Co., Sheffield Parts Div., P.O. Box 791, Sheffield, Ala. *9A-2*
Strobel, Raymond S., 5100 Congress Dr., New Orleans, La. *0A-1*
Strohm, Paul E., 820 Annabelle Rd., Vestal, N. Y. *48A-1*
Stroud, George H., 1012 Delaware Ave., Suffolk, Va. *0A-1*
Strouss, David M., 21 Sullivan Village, Easton, Pa. *0A-1*
Stuard, Alvin W., 3825 S.E. 25th St., Oklahoma City 15, Okla. *57A-1*
Studebaker, Blair R. Jr., 2375 Collins Rd., Pittsburgh 35, Pa. *3A-1*
Studner, Peter K., 81 Meehan Dr., Dayton 3, Ohio *2A-2*
Stump, Harry B., 1033 Orchard, Charleston, W. Va. *58S-4*
Stymfal, Peter A., 148 Millers Lane, Kingston, N. Y. *0A-1*
Styskel, Edward F., 2525 San Carlos Dr., Walnut Creek, Calif. *12A-1*
Suarez, Roberto, #5 Turquesa St., Humacao, Puerto Rico *0A-1*
Sublett, Jack R., 1805 Truman N.E., Albuquerque, N. M. *59S-3*
Subramanian, K. Bala, 81 Q Road, South Park, Jamshedpur, India *4A-S*
Sudell, William B. Jr., 2755 Lardner St., Philadelphia 49, Pa. *31A-2*
Sugar, Carl, 109 E. Weber Ave., Stockton, Calif. *43A-2*
Sullivan, Albert W., 25437 Feijoa Ave., Lomita, Calif. *23A-1*
Sullivan, Arthur J. F., 215 Oneida Pl., Corning, N. Y. *48A-1*
Sullivan, Benjamin J., Barry Controls, Inc., 700 Pleasant St., Watertown, Mass. *30AF-4*
Sullivan, Donald N., 8685 W. Bayaud Ave., Lakewood, Colo. *32A-1*
Sullivan, Dorothy P., 1110 Washington Ave., St. Louis 1, Mo. *16A-1*
Sully, Dan G., Sierra Electronic Corp., 1050 Brittan Ave., San Carlos, Calif. *37A-1*
Summers, Donald R., Box 350B, Rt 1, Colona, Ill. *46AF-4*
Sump, Lloyd E., 2300 Grafton Rd., Rt. 1, Grafton, Ohio *7S-4*
Sundby, Ralph A., 3182 Over St., Abilene, Texas *0A-3*
Sundell, Donald A., 5407 Holland St., Oakland 1, Calif. *12A-1*
Sundstrom, James E., 38 Rye Rd., Rochester 13, N. Y. *44S-4*
Surmacz, Joseph G., 1633 N. 69th St., Milwaukee 13, Wisc. *45S-4*
Sussman, Jerome R., 17 Van Siclen Ave., Brooklyn 7, N. Y. *5A-2*
Suszynski, Nicholas J. Jr., River Road, Weedsport, N. Y. *0A-1*
Suter, Daniel E., 1607 Ridge Rd. W., Rochester 13, N. Y. *44S-4*
Suthern, Lewis C., 392 Cohennet St., Taunton, Mass. *0A-1*
Suttle, Otis C. Jr., 837 W. Main St., Elkin, N. C. *21A-2*
Sutton, Homer M. Jr., 14600 S. Princeton Ave., Chicago 27, Ill. *25A-1*
Sutton, Robert M., 747 Harding St., Westfield, N. J. *5S-4*
Suzuki, Richard, 1045 16th Ave., S.E., Minneapolis 14, Minn. *38A-2*
Svet, Edward J., 307 D East Elmwood, Burbank, Calif. *23AF-3*
Swager, Warren M., 194 N. Forest Rd., Williamsville 21, N. Y. *49S-3*
Swain, Fred A., General Electric Co., A.G.T. Div., Bldg. A., Cincinnati 15, Ohio *8AF-4*
Swalm, Prof. R. O., Dept. of Ind. Engr., Syracuse University, Syracuse 10, N. Y. *13S-4*
Swanson, Eldon A., 514 S. Park Dr., Chesterton, Ind. *53S-3*
Swart, James K., 3118 Mayfield Rd., Cuyahoga Falls, Ohio *52A-1*
Sweeney, Matthew J., 903 Lexington St., Wheaton, Ill. *25S-4*
Sweeney, Richard J., Wilton Rd., Westport, Conn. *5S-4*
Sweeney, Robert H., 709 S. Richard St., Bedford, Pa. *3A-1*
Sweet, Leopold, 497 College St. Ext., Wadsworth, Ohio *52A-1*
Sweet, Philip H., Diamond Chain Co. Inc., 402 Kentucky Ave., Indianapolis 7, Ind. *35S-4*
Sweetser, Everard R., General Electric Co., Aircraft Nuclear Propulsion Dept., Cincinnati 15, Ohio *8A-2*
Sweitzer, Leslie M., 121 Morningside Ave., Vallejo, Calif. *12A-1*
Swenson, H. Raymond, 1065 Birchdale Dr., Elgin, Ill. *25A-1*
Swetting, J. Rodney, Norris & Elliott, Inc., 85 E. Gay St., Columbus 15, Ohio *18-4*
Swim, Jack G., 3305 25th St., Rock Island, Ill. *46A-2*
Swisshelm, Theron W., U.S.S. Corp., Gary Sheet & Tin Mill, Gary, Ind. *53S-3*
Switzer, William D., 60 Brainerd Apts., Chattanooga 11, Tenn. *54A-1*
Sykes, Walter L., 88 Hatherly Rd., Waltham 54, Mass. *30A-2*
Sylvester, Norman L., 55 W. Rosslyn Ave., Worthington, Ohio *18-4*
Sylvia, Franklin J., The Ohio Fuel Gas Co., 115 Park Ave. W., Mansfield, Ohio *0A-1*
Szanca, Edward M., 8410 Rosewood Ave., Cleveland 5, Ohio *7A-2*
Szibel, Frank, 2460 S. 74 St., West Allis 19, Wisc. *45A-2*
Szilagyi, John F., 354 Huntmere Dr., Bay Village, Ohio *7S-4*

Tadewald, Harvey J., 2330 31st St., A., Moline, Ill. *46S-4*
Taft, George H., 6602 Babcock Ave., No. Hollywood, Calif. *23A-1*
Taft, George H., R. #2, Box 1281, Bremerton, Wash. *0A-1*
Tagg, Jerome, 3127 Roe Dr., Houston 17, Texas *22A-1*
Talarovich, Thomas J., 521 Cedar St., Freeland, Pa. *0A-1*

Talbott, John C., 190 Edna St., Poland, Ohio *24S-3*
Talbott, Lawrence F., 4379 Johanna Ave., Lakewood 8, Calif. *23S-4*
Talley, Dayton E., 1329 Post St., Kingsport, Tenn. *17A-1*
Tallmadge, Edward C., 1102 N. Old Manor, Wichita, Kansas *56S-4*
Tam, Robert J., Ross Gear & Tool Co., 714 Heath St., Lafayette, Ind. *35AF-4*
Tamanini, Elmer B., 2 Anderson Pl., Clinton, N. Y. *0A-1*
Tambs, Lewis A., Organizacion De Oleoductos, Creole Petroleum Corp., Tiajuana, Cabimas, Edo Zulia, Venezuela, S. A. *12A-1*
Tanner, John P., Missile Section, Bendix Aviation Corp., Mishawaka, Ind. *0A-1*
Tarne, Donald R., 516 S. Pine, Mt. Prospect, Ill. *25A-1*
Tarrants, Lt. William E., AO 2232775, 1094th Avn. Dep. Gp., Manzano Base, Albuquerque, N. M. *0A-1*
Tartaglia, Joseph W., 931 Haddon Ave., Collingswood, N. J. *31A-2*
Tata, Richard J., Woodford Ave., Plainville, Conn. *0A-1*
Tate, Raymond P., 5348 S. Delaware, Tulsa, Okla. *15A-1*
Tatham, Raymond, 1977 N. Starr Ave., Columbus, Ohio *1A-4*
Tauber, George R., 5469 Hyde Park Blvd., Chicago 15, Ill. *25A-1*
Taylor, Bernard H. Jr., 1501 W. Thomas St., Rocky Mount, N. C. *0A-1*
Taylor, Dabney S. Jr., 2736 Shippen Ave., Louisville 6, Ky. *18A-1*
Taylor, Edwin R., 1920 Maple, Wichita, Kansas *56S-4*
Taylor, Frank E. Jr., 523 Cragmont Ave., Berkeley, Calif. *12S-4*
Taylor, Prof. George A., 2 Occom Ridge, Hanover, N. H. *63S-3*
Taylor, Harold L., 5020 E. Blade, Wichita 18, Kansas *56S-4*
Taylor, Herbert O. Jr., 2700 Purselley, Ft. Worth, Texas *10A-1*
Taylor, Jack W., Rt. 2, Box 181, Kent, Ohio *52S-3*
Taylor, John, 1030 Manor Dr., Wilmette, Ill. *25S-4*
Taylor, Lawrence R., Rt. 3, Skyline Dr., Morristown, Tenn. *0A-1*
Taylor, Lucian W., 665 Arrowood Ct., Los Altos, Calif. *37A-3*
Taylor, Murry D., 1710 N. Chautauqua, Wichita 14, Kansas *56AF-4*
Taylor, Raymond T., 320 Village Rd., Lancaster Village, Wilmington 5, Del. *0A-1*
Taylor, Robert F., 308 W. Washington St., Chicago 6, Ill. *25S-4*
Taylor, Robert M., 1528 Belle Ave., Lakewood 7, Ohio *7S-4*
Taylor, William W., 1614 N. Dixon Circle, Cincinnati 24, Ohio *8S-4*
Teapole, Donald L., 2021 W. Mulberry, Phoenix, Ariz. *0A-3*
Teasley, Ernest, McArthur Dr., Manchester, Tenn. *64A-1*
Teate, Guy J., 3210 Addison Dr., Doraville, Ga. *6A-2*
Teisher, Simeon D., 3163 44th Pl., Sandia Base, Albuquerque, N. M. *59S-3*
Tellin, Thomas W., 28 Heathcote Ave., Metuchen, N. J. *0A-1*
Templeton, David P. Jr., 41 Edgewood, Kingsport, Tenn. *17A-1*
Templeton, Robert P., 7114 D Village Way, Houston, Texas *22A-1*
Tengler, John H., 3692 E. 110 St., Cleveland 5, Ohio *7A-2*
Terr, Joseph, 2457 Derbyshire Rd., Cleveland Heights 6, Ohio *7S-4*
Terrell, Carter S., 1825 Pinewood Circle, Charlotte, N. C. *0A-1*
Terrell, Ollney B., 1602 Dorr St., Toledo 7, Ohio *36A-1*
Tesh, John O., Box 563, Badin, N. C. *0A-1*
Tettelbach, William Roy, 1791 Harden Rd. S.W., Atlanta 15, Ga. *6A-2*
Thakur, Bijoy Krishna, Section Officer, G. S. Office, TISCO, Jamshedpur, India *4A-S*
Thal, George M., 1210 Bellaire St., Denver 20, Colo. *32A-1*
Thal, Norman R. Jr., 2718 Barrington Dr., Toledo 6, Ohio *36A-1*
Tharp, Tillman C., 1760 W. Sprague Rd., Cleveland 29, Ohio *7S-4*
Thayer, Robert T., Griscom Russell Co., Box 236, Massillon, Ohio *19AF-3*
Thayer, Sanford B., 1985 University Ave., Palo Alto, Calif. *37A-1*
Thelwell, Raphael R., Tierneys Corner, Wharton, N. J. *5A-2*
Therrell, William H., 54 Branch St., Whistler, Ala. *0A-1*
Thiagarajan, G., I.E. Dept., TISCO, Jamshedpur, India *4S-S*
Thiele, Ernest E., 260 Parkway Dr., Pittsburgh 28, Pa. *3A-1*
Thiele, Paul W., Cleveland Graphite Bronze Co., 17000 St. Clair Ave., Cleveland 10, Ohio *7AF-4*
Thoben, Edward M. Jr., American Standard, 1541 S. 7th St., Louisville 8, Ky. *18A-1*
Thomas, Allen M., 1213 2nd Ave., Conway, Pa. *3A-1*
Thomas, Benjamin J., 1244 Carlisle Ave., Macon, Ga. *55S-3*
Thomas, David L., 2214 Haste, Berkeley, Calif. *12A-1*
Thomas, David L., Rt. 1, Box 108, Crows Landing, Calif. *0A-1*
Thomas, Donald C., 1418 S. Carolina, Tulsa 19, Okla. *15S-3*
Thomas, Donald E., 31 Wolf Rd., Croton-on-Hudson, N. Y. *5A-2*
Thomas, Edward J. Jr., V-P & Controller, Marquette Casualty Co., 600 Civic Center Bldg., New Orleans, La. *41S-3*
Thomas, Frederick H., College of Engr., Univ. of Buffalo, Buffalo 14, New York *49S-3*
Thomas, Prof. Jack V., Dept. of Ind. Engr., Virginia Polytechn c Institute, Blacksburg, Va. *0S-3*
Thomas, James R., 22352 Gregory St., Dearborn 8, Mich. *47A-2*
Thomas, Kenneth F., 62 LaSalle Rd., West Hartford 7, Conn *0S-3*
Thomas, Leon M., International Nickel Co., Riverside Dr., Huntington 1, W. Va. *58S-4*
Thomas, Milton G., 12213 Octagon St., Los Angeles 49, Calif. *23S-4*
Thomas, Sidney J., 3920 Tacoma Ave., Ft. Wayne, Ind. *34A-1*
Thomas, Sydney F., 625 Market St., San Francisco 5, Calif. *12S-4*
Thomas, William R., Nat'l Carbon Co., P.O. Box 749, Charlotte, N. C. *0S-3*
Thompson, Albert E., 1950 Chilton Dr., Glendale 1, Calif. *23S-4*
Thompson, Courtland S., 1860 S.W. 64th Ave., Miami, Fla. *40AF-3*
Thompson, David A., 204-13 Stanford Village, Stanford, Calif. *37A-1*
Thompson, Hal R., Carbide & Carbon Chemicals Co., P.O. Box 471 Texas City, Texas *22A-1*
Thompson, Henry H., 600 Robinson Dr., Birmingham 6, Ala. *9A-2*
Thompson, Herbert H., Box 451, Salem, Va. *0A-1*
Thompson, James W., 119 Lisle Ave., Falls Church, Va. *14S-4*
Thompson, John D., Rt. 3, Grenada, Miss. *0A-1*
Thompson, John W., 17000 St. Clair Ave., Cleveland 10, Ohio *7A-2*
Thompson, LaVern N., Oscar Mayer Packing Co., 1337 W. 2nd St., Davenport, Iowa. *46A-2*
Thomson, Arthur E., 5211 Chelsea Ave., La Jolla, Calif. *29A-2*
Thomson, Duncan, 305 Peninsula Ave., New Smyrna Beach, Fla. *0A-1*
Thomson, Henry E. Jr., 6533 17th Ave., N.E., Seattle 15, Wash. *20S-4*
Thomson, Robert J., 42 Spruce St., Schenectady 4, N. Y. *0A-1*
Thorn, Carl W., 5628 N. Ormes, Philadelphia 20, Pa. *31S-4*
Thornton, William M., 308 Florence Ave., Statesboro, Ga. *26A-1*
Thorpe, C. Lloyd, General Manager, Willamette Iron & Steel Co., Portland, Oregon *12S-4*
Thuering, George L., Dept. of Ind. Engr., Penn State University, University Park, Pa. *0S-3*
Thuesen, Prof. H. G., Head School of I. E. & Management, Oklahoma A & M, Stillwater, Okla. *0F-0*
Thurber, Leo C., 1080 S. James Rd., Columbus 13, Ohio *1S-4*
Thurnauer, Hugh, 27828 Osborn Rd., Bay Village, Ohio *7S-4*
Tilden, Robert M., 13914 San Diego Ave., Cleveland 11, Ohio *7A-2*
Tillman, Carroll A., 221 1st St. S.W., Moultrie, Ga. *0A-1*
Tilly, Victor J., Trapelo Farm, Forest St., Waltham, Mass. *30A-2*
Tilton, Doyle D., 69 N. Westgate Ave., Columbus 4, Ohio *1A-2*
Timm, Donald L., 2904 Acton St., Berkeley 2, Calif. *12A-1*
Timms, Garvin W., 2315 Giffels Dr., Cuyahoga Falls, Ohio *52A-1*
Tims, George B. Jr., Prof. & Head Dept. of I.E., Lamar State College of Tech., Beaumont, Texas *0S-3*
Tinker, Kemper M., 7831 Burnham Ave., Chicago 49, Ill. *25S-4*
Tippitt, Frank W., 5631 Overdale, Houston 21, Texas *22A-1*
Tipton, Emmett J., McQuay Norris, Navy Div., 4100 Forrest Park Blvd., St. Louis, Mo. *16AF-3*
Titler, F. J., 2516 Milton Rd., University Heights 18, Ohio *7F-0*
Tittel, Richard P., 137 Center Ave., Chatham, N. J. *61A-2*
Tivald, Andrew P., 128 W. Adams, Paulsboro, N. J. *31A-2*
Tivald, Julius G., 128 W. Adams, Paulsboro, N. J. *31A-2*
Tkacik, Edward, 704 Yeates St., Bethlehem, Pa. *0A-1*

Todd, Richard F., 651 Cumberland Ave., Syracuse 10, N. Y. *13A-4*
Toepfer, 2/Lt. George O. Jr., AO 3050415, HQ. USAFE, DCS/MAT, APO 633, USAF, New York, N. Y. *0A-1*
Toline, Theodore L. Jr., 830 Dexter, Apt. 4, Denver 20, Col. *32A-1*
Tolley, P. R., 934 Chester Rd., Glendale, Ohio *8S-4*
Tomis, Donald Marcus, Gen. Del., Minneapolis, Minn. *38A-2*
Tompkins, Albert M., I.O.F. Glass Fibers, Waterville, Ohio *36AF-3*
Tompkins, Kennard P., 64 Grand St., Redwood City, Calif. *37A-1*
Topf, Sam B., 3925 Riviera Dr., Coral Gables, Fla. *40S-3*
Topàts, Robert J., 8940 Long Lane, Cincinnati, O. *8S-4*
Torgersen, Paul E., 5579 Indianola Ave., Worthington, Ohio *1A-2*
Torie, Charles B., 7109 Ash Place, Gary, Ind. *53S-3*
Torpey, James M., 1122 Clearview St., N.W. Warren, Ohio *24S-3*
Toscano, Albert M., 5758 Hauserman Rd., Parma 29, Ohio *7A-2*
Totten, David E., 7 Beech Rd., Wichita, Kansas *56S-4*
Tower, David B., 1320 E. Jordan St., Pensacola, Fla. *33A-1*
Towle, Philip H., 1555 Edgewood Dr., Palo Alto, Calif. *37A-1*
Townsend, James, 1216 W. 17th St., Pine Bluff, Ark. *0A-1*
Townsley, Claude J., 310 Edge Knoll Lane, Ft. Wayne, Ind. *34A-1*
Tracey, Frank J., 2712 S. Vrainit, Denver 19, Colo. *32A-1*
Trachtenberg, Jules H., 109-05 72nd Ave., Forest Hills 75, N. Y. *5A-2*
Trachtman, Lester N., 161-06 Jewel Ave., Flushing 65, N. Y. *5A-2*
Trautmann, John H., Products for Industry, 1530 Summer St., Stamford, Conn. *5A-2*
Tregaskis, Charles, IBM, North St., Endicott, N. Y. *48S-3*
Treiman, Joshua N., Box 2568, San Antonio 6, Texas *39A-2*
Trent, Fred A., Rt. 4, Bristol, Va. *17A-1*
Trent, William L., 1128 S. Summer St., Wheaton, Ill. *25A-1*
Trenwith, Don A., 1918 Westfield Dr. So., Columbus 23, Ohio *1AF-4*
Troskov, Alexander, 1084 Willmohr, Brooklyn 12, N. Y. *5A-2*
Trigg, John N., River Rd., Topsfield, Mass. *30A-2*
Trimas, Marvin, 557 So. Franklin St., Wilkes Barre, Pa. *0A-1*
Triplett, C. Thomas, Chrysler Corp., Kokomo, Ind. *35A-2*
Tritt, Edgar H., 2674 67th Ave., Oakland 5, Calif. *12S-4*
Troeger, E. Alan, 234 Plaza Serena, Ontario, Calif. *23A-1*
Trott, Alan D., 738 Magnolia Dr., Seaford, Del. *0A-1*
Trost, Vernon F., 8112 S. May, Chicago 20, Ill. *25S-4*
Troutwine, Wray R., 15 Canterbury Village, Columbus 21, Ohio *1A-2*
Troyan, P. V., 2125 Murray Hill Rd., Cleveland 6, Ohio *7S-4*
Truelsch, Gerhard J., 889 Quarry Dr., Cleveland Heights 21, Ohio *7S-4*
Trunnell, Robert E. Jr., Deere & Co., 3300 River Dr., Moline, Ill. *46A-2*
Truskans, Joseph, 242 McCormick Pl., Cincinnati 19, Ohio *8AF-4*
Tryon, Walter W., Box 1003, Rio Vista, Calif. *12S-4*
Tseng, Anthony T., 1331 Woodlawn Ave., Middletown, Ohio *8S-4*
Tucker, Arthur L., 65 Mills Lane, Bloomfield, Conn. *0A-1*
Tucker, Eugene A., 631 E. 12th St., Alton, Ill. *16AF-3*
Tucker, John L., 9926 Hillside Rd., Alta Loma, Calif. *0A-1*
Tucker, Leo E., 1803 Elder Dr., Arlington, Texas *10S-3*
Tucker, Robert J., 118 N. Main St., Cortland, N. Y. *13S-4*
Tucker, Thomas E., P.O. Box 295, Thunderbolt, Ga. *26A-1*
Tulk, Robert A., 2335 Altadena Ave., San Diego 5, Calif. *29A-4*
Tulkoff, A. Joseph, Lockheed Aircraft, South Cobb Dr., Marietta, Ga. *6A-2*
Tullar, Frederick E., 34 Melbourne Terr., Waterbury, Conn. *0A-1*
Turk, Robert H., 916 Annabelle Dr., Toledo 12, Ohio *36S-3*
Turkes, Prof. Walter R., 149 Lawrence Ave., Homestead Park, Pa. *3S-3*
Turnbull, David R., 101 Pennsylvania Ave., Havertown, Pa. *31S-4*
Turner, Claude S. Jr., 700 W. Princess Anne Rd., Apt. 6, Norfolk 7, Virginia *0A-1*
Turner, Ledr. James R., USNR (Ret), Natl. Steel & Shipbuilding Co., Harbor Dr. & 28th St., San Diego, Calif. *29AF-4*
Turner, Joseph L., 525 William Penn Pl., Pittsburgh, Pa. *3S-3*
Turner, Orren M., 201 Astelle, West Covina, Calif. *23A-1*
Turner, William R., 230 S. 750 East, Clearfield, Utah *50S-4*
Turney, Joe A., 619 Hunter, Wichita, Kan. *56A-2*
Turvaville, Lester J., 11,113 Elbow Dr., Tampa 4, Fla. *0A-1*
Tuzi, Louis A., 2900 Norfolk Rd., Cleveland Heights 6, Ohio *7A-4*
Tyler, James E. Jr., 7357 E. Marshall St., Tulsa, Okla. *15A-1*
Tyler, Truett, Convair, Dept. 8-1, Bldg. 33, 3302 Pacific Hwy., San Diego, Calif. *29S-4*
Tyrrell, Cyril Merton Jr., 3410 Frei Rd., Sebastapol, Calif. *0A-1*
Tysdal, Royal M., 4304 Hartwick Rd., College Park, Md. *14A-2*
Tyson, Herbert L., 76-12 35th Ave., Jackson Heights 72, N. Y. *5A-2*

Uebelacker, M. R., 524 S. First, Warrington, Fla. *33S-3*
Ufholz, Lou, 2418 Russell Ave., Parma 29, Ohio *7S-4*
Ujlaky, Albert, 1506 W. Columbia Ave., Davenport, Iowa *46A-2*
Ulrich, John E., 116 N. Hubbard Lane, Louisville 7, Ky. *18S-3*
Umanetz, Alex, Jr., 42 Potters Lane, Great Neck, N. Y. *5A-2*
Undercuffler, Edwin M., E.I. Du Pont de Nemours & Co., Engr. Dept., Engr. Service Div., Wilmington 98, Del. *31A-2*
Underwood, James Alan, Box 741, Wilmington, Del. *0A-3*
Unger, Donald J., 1533 Granger, Redwood City, Calif. *37S-4*
Unser, Raymond M., P.O. Box 615, Hampton, S. C. *6S-3*
Upchurch, Edwin B., 4028 Fama Dr. N.E., Atlanta 6, Ga. *6A-2*
Updegraff, Ralph W., 4424 7th S.W., Canton 10, Ohio *19S-3*
Urbanski, Edward F., 1538 Elkins Ave., Abington, Pa. *31S-4*
Utter, James R., 2225 Glenside, Cincinnati 12, Ohio *8A-2*
Utz, Robert L., 6324 Farmar Lane, Flourtown, Pa. *31A-2*

Vaden, Frank S. III, 9440 W. Airport Blvd., Los Angeles 45, Calif. *23A-1*
Vader, J. Quentin, National Lead Co., TIT Div., Carondelet St., St. Louis 11, Mo. *16A-1*
Vagnini, Louis T., 1320 Anderson Ave., Palisade, N. J. *5A-2*
Vail, Thomas P., 1130 Lake Shore Dr., Chicago 11, Ill. *25A-1*
Vais, James A., 223 Laurel Ave., Menlo Park, Calif. *37A-1*
Valentine, Alfred O., 1235 S. 53rd St., Philadelphia 43, Pa. *31A-2*
Valentine, Deane B., Colorado Fuel & Iron Co., 361 Delaware Ave., Buffalo, N. Y. *49S-3*
Valentine, Maurice T., Box 953, Panama City, Fla. *0A-1*
Valentino, Robert, 1785 Saratoga Ave., Cleveland 9, Ohio *7A-2*
Valfer, Ernst S., 2730 Garber St., Berkeley 5, Calif. *12A-1*
Valle, Pat, 1715 Nagel Rd., Cincinnati 30, Ohio *8A-2*
Vallette, William J., 12 Adams, Newburyport, Mass. *30S-4*
Van Amburg, Charles W., Ralston Purina Co., 1501 E. 4th St., Ft. Worth, Texas *10A-1*
Van Arsdell, S. G. Jr., 1182 Evansdale Ave., Newark, Ohio *1A-2*
Van Camp, Leo R., 1156 Hillcrest Rd., W. Lafayette, Ind. *35A-2*
Vander Mast, Adrian C., RayBestos Manhattan, Inc., Wabash Div., Darlington Ave., Crawfordsville, Ind. *35A-2*
VanderMyde, Earl C., 10745 S. Morgan St., Chicago 43, Ill. *25A-1*
Van Cleave, James F., Aro Inc., Tullahoma, Tenn. *64AF-3*
Van Deventer, Arthur J., 264 Palisade Ave., Yonkers, N. Y. *5S-4*
Van Eman, Edgar K. Jr., 4331 E. 24th St., Tulsa, Okla. *15A-1*
Van Harlingen, David E., 3212 Wilmington Ave., Dayton 9, Ohio *2A-4*
Van Horn, Roy H., 333 Shadwell Dr., San Antonio 1, Texas *39AF-4*
Vanni, Mario A., Deere & Co., 3300 River Dr., Moline, Ill. *46A-2*
Van Stavern, Alva N., 12318 Ballas Lane, St. Louis 22, Mo. *16S-3*
VanWagnen, Carl G., 8035 16th Ave., N.W., Seattle 7, Wash. *20S-4*
Van Zandt, James F., 15701 N.W. 28 Ct., Opa locka, Fla. *40A-1*
Varbalow, Martin H., 7033 Stenton Ave., Philadelphia 38, Pa. *31S-4*
Varner, Siegel S. Jr., 8533 11th Ave. So., Minneapolis 20, Minn. *38A-2*
Varnier, Herman Earl, 6401 Clydewood Ave., Richmond, Va. *0A-1*
Varraux, I. A., 711 Shady Ave., Sharon, Pa. *24S-3*
Vaughan, A. W., Jr., 908 S. Spring Ave., LaGrange, Ill. *25S-4*
Vaughan, Sherman L., 1401 W. Hempstead, Pasadena, Texas *22A-1*
Vaughn, David, c/o Service Dept., Allis Chalmers, Milwaukee 1, Wisc. *45A-2*

Vaughn, Ralph L., Kaiser Steel Corp., P.O. Box 217, Fontana, Calif. *68-3*
Vay, Leroy M., Regional Ind. Engr. Mag., Post Office Dept., 870 Market St., Rm 554, San Francisco 2, Calif. *12S-4*
Veirs, Stephen D., The F. & R. Lazarus & Co., Columbus 15, Ohio *1S-4*
Ventura, George, Harnischfeger Corp., Truck Crane Plant, Danforth Rd., Escanaba, Mich. *45S-4*
Verba, Paul, Avenue Plaza Apts., 213 Davenport Rd., Toronto, Ontario, Canada *6A-1*
Verkozen, Andrew, 622 21st Ave., San Francisco 21, Calif. *12S-4*
Vernekar, V. S., Chief Ind. Engr., Tata Iron & Steel Co., Ltd., Jamshedpur, India *4S-S*
Vesely, Charles, 197 N. 123rd St., Wauwatosa 13, Wisc. *45S-4*
Vesling, Dean H., Rt. 1, Clarendon, Pa. *6A-1*
Vest, Charles R., Rt. 2, Box 231 B, Jeffersonville, Ind. *1SA-1*
Vester, Lyle A., Rt. 1, Milford, Ohio *8S-4*
Vetter, Edward A., 3654 Henry Ave., Louisville, Ky. *1SS-3*
Vetter, Robert A., 2734 Clara, Ft. Wayne, Ind. *34A-1*
Vidal, Pablo A., Via Layetana 99, Barcelona, Spain *1A-2*
Vigder, Arnold, 69-43 Harrow St., Forest Hills, N. Y. *5A-2*
Villers, Dr. Raymond, 125 Broad St., New York 4, N. Y. *5S-4*
Villines, Dallas Madison, P.O. Box 535, Holden, W. Va. *58S-4*
Vines, Quentin C., Univ. of Michigan, Ann Arbor, Mich. *47S-4*
Vinnenberg, Raymond C., 131 Sunset Dr., Williamsville 21, N. Y. *49A-1*
Vitullo, Frederick A., 1895 Woodlawn, Cleveland 12, Ohio *7A-2*
Vivian, Charles, 712-S. York St., Denver 9, Colo. *32AF-3*
Vogt, Richard L., 9122 Mendota, Detroit 12, Mich. *47S-4*
Volk, Robert D., 176 N. Highland Ave., Los Angeles 36, Calif. *23A-1*
Volpe, Edward G., Hammermill Paper Co., East Lake Rd., Erie, Pa. *51A-2*
Volz, Edward J., Rt. 2, Fox North Rd., Hubbard, Ohio *24S-3*
Vondracek, Joseph L., Box 102, 21912 Celes St., Woodland Hills, Calif. *23A-1*
von Ahlefeldt, Rolf S., 1325 Greenwood St., Pueblo, Colo. *6S-3*
Vorhis, Robert P., 3200 Milton Rd., Middletown, Ohio *8S-4*
Votapka, Otto E., 304 Loren Ave., Vestal, N. Y. *48A-1*
Votta, Lawrence G., 1027 Cooks Lane, Baltimore 29, Md. *42A-2*
Voyles, James H. Jr., 7920 Bonfield Ave., No. Hollywood, Calif. *23S-4*
Vrbancic, Walland P., Western Lithograph Co., 600 East 2nd St., Los Angeles, Calif. *23A-1*

Wadsworth, Harrison M. Jr., 918 D Birch Rd., East Lansing, Mich. *6A-1*
Waechter, James M., 329 Schofield Bldg., Cleveland 15, Ohio *7S-4*
Waeckerle, William S., 1726 Kentfield, Apt. 1, Redwood City, Calif. *37A-1*
Wagner, Charles A. Jr., 2802 Dodge Ave., Ft. Wayne, Ind. *34S-3*
Wagner, Phil, 1689 Grand Ave., Piedmont 11, Calif. *12S-4*
Waid, James K., 214 Adair Ave., S.E., Atlanta 15, Ga. *6A-2*
Walichowski, Edward J., 6145 Chaffin St., Houston, Texas *22A-1*
Walker, Albert G., 422 E. Greenland Ave., Oconomowoc, Wisconsin *45A-2*
Walker, Clyde C., Acme Steel Co., Riverdale Station, Chicago 27, Ill. *55A-1*
Walker, Ernest H., Granite City Steel Co., 20th & Madison, Granite City, Ill. *16A-1*
Walker, Frank E. Jr., 601 Montclair, College Station, Texas *9A-1*
Walker, Jack R., 3439 Briar Mill Rd., Atlanta 6, Ga. *6A-2*
Walker, Kenneth E., 4236 Ringle Rd., Chamblee, Ga. *6AF-4*
Walker, Thomas K. Jr., 3500 E. 120 St., Cleveland 13, Ohio *7A-2*
Walker, William D., Corning Glass Works, Corning, N. Y. *48A-1*
Walker, William O. Jr., 10100 Harper, Room 405, Detroit 13, Mich. *47A-2*
Wall, Charles R., 7900 Caxton Circle West, Jacksonville 8, Fla. *27S-4*
Wall, Joe Hanson, General Electric Co., Methods and Standards, Bldg. 83, Rome, Ga. *6A-1*
Wallack, Paul M., 717 Kentucky, S.E., Albuquerque, N.M. *59A-1*
Walraven, Ernest B., 2421 S.W. 28, Oklahoma City 8, Okla. *57AF-3*
Walser, Vergil H., 806 Simpson, St. Paul, Minn. *38S-4*
Walsh, Harry H. Jr., 9810 Larston Dr., Houston 24, Texas *12S-4*
Walter, Russell W., Rt. 5, Valparaiso, Ind. *54S-3*
Walters, George L., 841 Bayshore Dr., Warrington, Fla. *33A-1*
Walters, Capt. Wilmer C. Jr., 5868 W. 88th., Los Angeles 45, Calif. *23A-1*
Walther, Fred S., 900 W. David Rd., Dayton 9, Ohio *2A-2*
Walton, Richard W., 804 Old Lincoln Highway, Langhorne, Pa. *31S-4*
Walton, W. E., 1415 Acacia Ave., Torrance, California *23A-1*
Walton, William Morris, Burton Mfg. Co. Inc., P.O. Box 351, Jasper, Ala. *9A-2*
Waltz, Edward G., Eastman Kodak, Kodak Park Bldg. 82, Rochester, N. Y. *44S-4*
Wanninger, George T., 203 Royal Ave., Ferguson 21, Mo. *16S-3*
Ward, Joseph B., 7217 Orchard Pl., Seattle 8, Wash. *20S-4*
Ward, Kendell W., 1244 Edgemont Dr., Des Moines, Iowa *6A-1*
Ward, Robert G., 393 English Rd., Rochester 16, N. Y. *44A-2*
Ward, William J., 127 Grand View Ave., Elmira, N. Y. *48A-1*
Wardell, Albert W., 820 Liberty St., Trenton 10, N. J. *6A-1*
Waring, Gordon E., Morse Chain Co., Ithaca, N. Y. *48S-3*
Warlow, Mervyn H., Republic Steel Corp., Warren, Ohio *24S-3*
Warner, Anthony F., 4350 River Rd., N.W., Washington 16, D. C. *14A-2*
Warner, Raymond A., 18 MacGregor Ave., Maine, N. Y. *48A-1*
Warrell, J. E., Box 432, Carlisle, Pa. *6S-3*
Warren, Ward E., Reliance Electric & Engr., Euclid Ave., Euclid, O. *7S-4*
Warschauer, James E., 198 E. Blake Ave., Columbus 2, Ohio *1A-2*
Warschauer, Thomas Myer, 5284 Conklin Dr., Hilliards, Ohio *1A-4*
Warsinsky, Albert E., 739 Willey St., Morgantown, W. Va. *6A-1*
Wartner, Frank J., 17173 Forest, E. Detroit, Mich. *47A-2*
Washauer, Louis H., 800 Kingsland Ave., University City, Mo. *16A-1*
Wassel, George, 1455 E. 185, Cleveland, Ohio *7S-4*
Wasserman, Arnold, 133A Camelot Court, San Antonio, Texas *39A-2*
Waters, Eugene C., 1130 Stuart Blvd., N.E., Massillon, Ohio *19A-1*
Watson, Bruce G., 1449 Hancock Blvd., Reading, Pa. *6A-1*
Watson, Clifford B., 4061 S. Broadway, Englewood, Colo. *32A-1*
Watson, Jerry J., 6913 S. 124 St., Seattle 88, Wash. *20A-2*
Watson, Loren E., 1335 E. Sagewood Dr., Rt. 3, Stone Mountain, Ga. *6AF-4*
Watson, Robert E., 24 Forest Ave., Delaware, Ohio *1A-2*
Watson, Thomas E., 6 Brick Row, Yorklyn, Delaware *9A-1*
Watt, Dale H., 528 E. 5th, Tulsa 10, Okla. *15S-3*
Watt, William L., 829 Texas Ave., Signal Mountain, Tenn. *54A-1*
Watters, Ralph N., 263 Covington St., Oakland 5, Calif. *12S-4*
Watts, Douglas T., 110 Kellum Place, Winston Salem, N. C. *21A-2*
Watts, Joseph T. Jr., 3027 Gilmer Ave., Winston Salem, N. C. *21A-2*
Way, William C. D., 811 Pitt Rd., Cheltenham, Pa. *31S-4*
Wayman, Kenneth S., 428 Caithness Rd., St. Louis County 15, Mo. *16A-1*
Weaver, Earl B., 228 Sarvis Dr., Knoxville, Tenn. *11S-4*
Weaver, James A., 243 Avery Rd., Hilliards, Ohio *1S-4*
Weaver, William H., 9 Newell Rd., Amherst, Mass. *6S-3*
Webb, Kenneth B., 3003 Pope Dr., Chattanooga 11, Tenn. *54A-1*
Weber, Henry H., 1136 Fernwood Dr., Millbrae, Calif. *37A-1*
Weber, J. Ronald, 800 Hoffnagle, Philadelphia 11, Pa. *31A-2*
Weber, John M., Rt. 1, Renfrew, Pa. *9A-1*
Weber, Russell C., Summit Lawn, Star Route, Allentown, Pa. *9A-1*
Weber, William S., 190 Cedar Ave., Sharon, Pa. *24A-1*
Webster, Dale A., 2622 Benvenue, Berkeley, Calif. *12AF-3*
Webster, John F., 1019 Cherokee Rd., Louisville 4, Ky. *1SA-1*
Wedeen, Lawrence P., 11045 S. Hobart Blvd., Los Angeles 47, Calif. *23AF-3*
Weeks, Joseph W., 1326 Arlington Ave., Anaheim, Calif. *23A-1*
Wehby, LaVern J., 305 Richmond S.E., Albuquerque, N.M. *59S-3*
Wehman, Charles P., 3926 Forest Highland Dr., Chattanooga 5, Tenn. *54A-1*

Wei, Ignatius Z. S., Acme Industrial Co., 200 N. Laflin, Chicago 7, Ill. *25AF-3*
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